inCider

A+

Apple II / Macintosh

AN IDG COMMUNICATIONS PUBLICATION

January 1992

NEW SECTION

FIRST LOOK

HyperStudio 3.0

PAGE 14

USA $3.95

Canada $4.95

Downloaded from www.Apple2Online.com

CRUISIN'

Make Your Mac and IIGS Cool, Rad, and Totally Bad

WHAT'S IN THE CARDS?

Four Hypermedia Options

REVIEWS

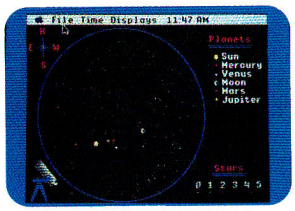
- SuperConvert 3.01
- Swamp Gas
- Iraq Stack
- Reading Maze

01

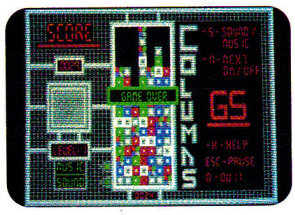
0 74470 12066 7

Your Choice FREE!

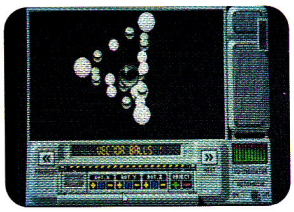
Tetris II



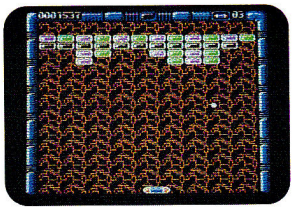
Tonight's Sky GS



Columns GS



Modulae GS



Flobynoid

Accessories

From now until December 31, 1991, Quality Computers, America's favorite Apple II dealer, offers you something unheard of — free software or accessories with every order. Now, not only will you get the lowest price, the best service, and *Enhance*, but you'll also get your choice of premium gifts — up to a $40 value — FREE!*

Seasons Greetings! Happy Computing!

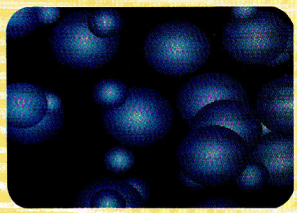
Free gifts must be requested at time of purchase. Gifts may also be purchased separately. Be sure to request your free gift with your next order.

NEW!

Signature GS

Is your IIGS just plain vanilla? Now you can make it a custom ride — with Signature, Q Lab's set of G-Devs that will soup up your IIGS. Signature lets you create a computing environment that is uniquely your own. With Signature you get:

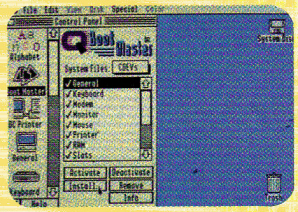
PHANTASM — A utility that prolongs screen life — and looks good doing it. When your screen has been still too long, it can become damaged. Phantasm prevents damage by automatically giving your screen something to do. A variety of fun, attractive screen activities are available, plus you can tell Phantasm when to come on.



GRAFFITI — There's nothing wrong with the IIGS desktop — except it's boring. Graffiti gives you a variety of colorful desktop patterns to choose from — or you can create your own.

SONICS — The "S" in IIGS stands for sound. Sonics lets you customize your IIGS sounds, and assign special sounds for specific functions. And these aren't just beeps — they're fun and entertaining. Add sounds to Insert/Eject Disk, Dialog Boxes, etc.

BOOTMASTER — Changing the configuration of all your IIGS's drivers, and system elements can be a pain. But BOOTMASTER makes it easy by putting the controls for all your IIGS's drivers, CDAs and NDAs on one master control panel. You turn them on and off at will — and change your selections easily.



Signature GS is easy to use, installs automatically, and comes with a 30-day warranty.

only $29.95

Quality Computers™

POWER FOR PERFORMANCE

1-800-443-6697

Circle 136 on Reader Service Card.

OBSOLETE?

NOT SO FAST!

Your Apple II® or IIGS® is *still* one of the best home computers ever produced. Why? Because Softdisk Publishing supports your Apple with 60 to 80 new programs every year. And, these programs can all be yours for ABOUT A DOLLAR EACH!

SOFTDISK™ and *SOFTDISK G-S*™ are software subscriptions produced especially for Apple II computers. After 10 years of publishing, we've gathered some of the nation's leading programmers to offer you all-new, all-original programs. With *SOFTDISK* or *SOFTDISK G-S* you'll find that your Apple is far from obsolete.

Each month five to seven new programs will come to your mailbox postage-paid. And, if you're like most subscribers, you'll find that a single program is worth the cost of the entire subscription.

SEND NO MONEY NOW!

Try a sample issue of *SOFTDISK* or *SOFTDISK G-S* **risk-free**. Check our "Bill Me" option and mail or fax the coupon back to us or call **Toll-Free 1-800-831-2694, Ext. 1004**. Why not try it now? You have nothing to lose but your worries about your Apple!

Here's what you'll get with your monthly subscription:

- A variety of games, educational tools, and productivity programs for the entire family—5 to 7 new ones every month.
- No shareware or public domain—no extra fees—we even pay postage.
- Not copy-protected; you can make your own back-ups.
- FREE TECHNICAL SUPPORT from *SOFTDISK* computer experts.
- Full easy-to-use documentation on disk.

ACT NOW AND RECEIVE A FREE GIFT!

Call **1-800-831-2694, Ext. 1004**, now to try an issue risk-free. Review your first issue. If you're not completely satisfied, for any reason, return our invoice marked "cancel" and you'll owe nothing! The first issue is yours to keep FREE. Order either *SOFTDISK* for the Apple II or *SOFTDISK G-S* for the IIGS. If you own a IIGS, you can enjoy both with our special combo rate—each subscription is totally different.

DISCOVER THE SECRETS OF THE PYRAMID*

*Available on a back issue.

We're so sure you'll love *SOFTDISK* and *SOFTDISK G-S* that we'll even send you our **Premium Graphics Collection, Vol. 4**, with your paid subscription. It's yours FREE just for subscribing.

CALL NOW
1-800-831-2694, Ext. 1004
OR MAIL COUPON, OR FAX TO 318-221-8870

SOFTDISK™ SOFTDISK G-S™
Softdisk Publishing • P.O. Box 30008 • Shreveport, LA 71130-0008

SYSTEM REQUIREMENTS: *SOFTDISK*–APPLE II+, IIc, IIc+, IIe (enhanced), IIGS and Laser 128 computers 64K required, 128K recommended. *SOFTDISK G-S*—Apple IIGS computer 1.0 meg and one 3.5" drive required, 1.25 meg and two 3.5" drives recommended.

FREE **YES.** Please rush my first RISK-FREE issue to the subscription I've checked below. I'll receive my Premium Graphics Collection, Vol. 4, with my paid subscription. For fastest service, call 1-800-831-2694, Ext. 1004.

COMBO OFFER* Includes monthly subscription to both *SOFTDISK and SOFTDISK G-S*
- ❑ **3 Months $39.95** (Just $6.66 per issue!)
- ❑ **12 Months $149.95** (Just $6.25 per issue!)

SOFTDISK*
- ❑ **3 Months $19.95** (Just $6.65 per issue!)
- ❑ **12 Months $69.95** (Just $5.83 per issue!)

SOFTDISK G-S*
- ❑ **3 Months $29.95** (Just $9.98 per issue!)
- ❑ **12 Months $89.95** (Just $7.50 per issue!)

Check Method of Payment:
- ❑ Payment enclosed **(U.S. Funds Only)**
- ❑ Charge My:
  - ❑ Discover ❑ VISA/MC ❑ Am. Exp.
- ❑ BILL ME **(U.S. only)**
  If I am not completely satisfied with my first issue for any reason, I will return your bill marked "cancel" and owe nothing. The first issue is mine to keep FREE.

Name _____

Address _____

City _____ State _____ Zip _____

Telephone (_____) _____

Check Disk Format: ❑ 5.25" ❑ 3.5"

Make checks payable to Softdisk Publishing. LA residents add: 4% state sales tax.

Card # _____ Exp. _____

Signature _____

*Call (318) 221-8718 for foreign prices. All offers subject to change. Allow 4-6 weeks for delivery of first issue.

MAIL OR FAX TO:
SOFTDISK PUBLISHING • P.O. BOX 30008 • SHREVEPORT, LA 71130-0008 • **FAX: 318-221-8870** • **1-800-831-2694**

IA012

Softdisk and Softdisk G-S and any names of programs appearing on Softdisk and Softdisk G-S are trademarks of Softdisk, Inc. All other product and service names are trademarks of their respective companies.

Circle 291 on Reader Service Card.

Quality Computers Apple Overnight 1-800-443-6697

Quality Computers™
POWER FOR PERFORMANCE

Your complete Apple II source

ENHANCE

FREE! One year subscription

Enhance is Quality Computers' bi-monthly informative-technical-entertaining newsletter. *Enhance* gives you the kind of information you need to make your Apple the effective work/educational tool it was designed to be, like product reviews and comparisons, new product announcements, news, and two special sections, Enhancing Education — focusing on key educational topics like grants, fund raising and hypermedia applications; and Club Corner — designed to spark interest in User Groups across the country.

Enhance also includes our catalog — full of all the hardware and software you need for your Apple II. Quality Computers catalog includes detailed product descriptions and MONEY-SAVING COUPONS.

Quality Computers has been publishing *Enhance* for over 4 years. It's free to all QC customers, or you can call for your free subscription today!

"After reading through this issue of Enhance, I am ready to invest in upgrading my Apple IIGS and add some programs rather than go to the MS-DOS computers. You have restored my faith!"

Robert C. Donald
Hall Park, OK

"You publication is every bit as informative as the other major Apple II magazines. And unlike some of the glossy Apple II magazines, it's nice to see your unreserved commitment to the Apple II line."

Phil Shapiro
Washington DC

Get ENHANCE free!

Join the hundreds of thousands who have enjoyed *Enhance* for over 4 years. Get your free subscription today!

Name _____

Address _____

City _____ State _____ Zip _____

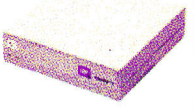
Phone (_____) _____

Clip and mail to: QUALITY COMPUTERS, P.O. Box 665, St. Clair Shores, MI 48080. Or call 1-800-443-6697

Circle 136 on Reader Service Card.

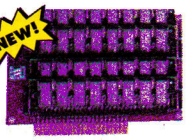
HARD DRIVES

QUALITY COMPUTERS	
40 MEG. w/o SCSI	389.95
100 MEG. w/o SCSI	589.95
200 MEG. w/o SCSI	999.95
45 MEG. Removable	649.95
CD ROM	Call
IIc Drive	Call
APPLIED ENGINEERING	
40 MEG. Vulcan	569.95
100 MEG. Vulcan	949.95



QUALITY COMPUTERS
The Q Drive is the best SCSI hard drive available. Automatically formats itself for IIe or IIGS, and comes with 15 MEG of free software.
40 w/o SCSI card .. 389.95
See page 4

NEW!



Quality Computers does it again. Tired of the low quality of many RAM cards, we built our own. The Q-RAM card uses SIMM modules to boost your IIGS's memory. The Q-RAM card comes with a 30-day, no-hassle trial period, and a 5-year warranty.
Q-RAM GS CARD
1 MEG 99.95
2 MEG 149.95
4 MEG 249.95

SCSI INTERFACE CARDS

APPLE	
Apple High-Speed	109.95
C.V. TECHNOLOGIES	
RamFAST/SCSI w/256K	189.95

MEMORY CARDS

QUALITY COMPUTERS	
Q-RAM GS	
1 MEG	99.95
2 MEG	149.95
4 MEG	249.95
APPLIED ENGINEERING	
RAMWORKS III	
256K	139.95
1 MEG.	199.95
RAMFACTOR	
256K	169.95
Z-RAM ULTRA II	
256K	189.95
RAM EXPRESS II	
256K	149.95
GS-RAM PLUS or ULTRA	
1 MEG.	169.95
GS-RAM III	
1 MEG.	139.95
CHINOOK	
4000 GS	
1 MEG.	149.95
2 MEG.	199.95
4 MEG.	299.95
C.V. TECHNOLOGIES	
GS MEMORY BOARD	
1 MEG.	139.95
2 MEG.	189.95
4 MEG.	289.95

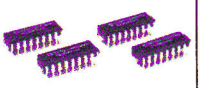
NEW!

MEMORY CHIPS

APPLE II	
256K (bank)	19.95
256Kx4 (set of 2)	12.95
1 MEG. (bank)	49.95
MACINTOSH	
1 MEG. SIMMS	49.95
2-4 MEG. SIMMS	Call
Mac Classic Modules	Call
Zipps	49.95
Macsnap Toolkit	19.95

DISK DRIVES

APPLE	
3.5" (IIe, II+)	329.95
3.5" (IIc Plus, IIGS)	349.95
5.25"	249.95
Controller	59.95
Unidisk Controller	69.35
APPLIED ENGINEERING	
AE 3.5"	199.95
AE 5.25"	139.95



APPLE II MEMORY
256K 19.95
256Kx4 ..... 19.95
1 MEG. 49.95
MACINTOSH MEMORY
1 MEG. SIMMS 49.95
Mac Classic ..... Call
ZIPPS 59.95

AMR	
AMR3.5" 1.4 MEG.	199.95
AMR 5.25"	129.95
LASER	
Laser 3.5"	149.95
Laser 5.25"	99.95
Laser UDC	49.95

PRINTERS

APPLE	
ImageWriter II	459.95
HEWLETT-PACKARD	
DeskJet 500	549.95
PANASONIC	
Panasonic 1180	199.95
Panasonic 1123	249.95
Panasonic 1124i	349.95
STAR	
NX-1020 Rainbow	249.95
NX-2420 Multi-Font	349.95
NX-2420 Rainbow	379.95

PRINTER INTERFACES

APPLIED ENGINEERING	
Parallel Pro	79.95
Buffer Pro 32K Option	89.95
Parallel/Buffer Combo	129.95
Serial Pro	89.95
ORANGE MICRO	
Grappler 9 Pin	89.95
Grappler Plus	89.95
QUALITY COMPUTERS	
QC Serial Card	69.95
SMT	
Printech	29.95
THIRDWARE	
Fingerprint GSi	89.95
Fingerprint Plus	89.95
Fingerprint G+ or SS w/cable	59.95
XETEC	
SuperWriter 924	64.95

SPECIAL!

BEST

MODEMS

APPLIED ENGINEERING	
DataLink 2400 (Internal)	159.95
DataLink Express w/MNP5 &Send-FAX	299.95
SUPRA CORP.	
SupraModem 2400	99.95
SupraModem Plus w/MNP5	159.95
SupraModem Plus w/FAX (Mac)	209.95
SupraModem 9600	529.95
SPECIAL!	
SupraModem 2400, Cable, and TIC	134.95

MONITORS

12" Amber or Green Monochrome	99.95
APPLE	
Apple RGB	459.95
MAGNAVOX	
Magnavox RGB	299.95
Custom Cable (GS)	19.95

INPUT DEVICES

APPLE	
AppleMouse IIe	119.95
CH PRODUCTS	
Roller Mouse	89.95
Mach III Joystick	29.95
Flightstick	47.95
EDMARK	
TouchWindow	275.95
KENSINGTON	
Turbo Mouse	114.95
KEYBOARDS	
IBM-Style Keyboard	79.95
IIGS/Mac ADB Keyboard	129.95

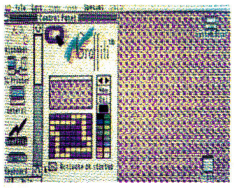
QUALITY COMPUTERS
Get the facts before you buy a hard drive — get the Hard Drive Buyers' Guide. Packed with info and statistics.
Hard Drive Buyers' Guide 6.00

IIe Rep. Keyboard	64.95
Numeric Keypad IIe	34.95
LASER	
Laser Mouse (IIe, IIc)	49.95
IIGS MICE	
A+ ADB Optical Mouse	89.95
Mighty Cat Mouse	89.95
THUNDERWARE	
LightningScan GS	199.95
LightningScan (Mac)	385.95
VITESSE	
Quickie Scan (IIe, IIGS)	199.95
Quickie Update	74.95

Quality Computers Apple Overnight 1-800-443-6697

Quality Computers™
POWER FOR PERFORMANCE

We'll meet or beat any nationally advertised price*



QUALITY COMPUTERS
Is your Apple IIGS just plain vanilla? Now you can make it a custom ride — with Signature, *Q Labs' set of C-DEVs that will soup up your IIGS. With* Signature *you get a set of colorful screen savers, a desktop pattern changer, a sound customizer, and a master control panel for all your drivers, CDAs and NDAs.*

Signature GS 29.95

ABRACADATA
Design Your Own Railroad lets you design to-scale model layouts covering areas of 4 feet to 9,999 feet wide. You select the model scale you need. The program provides precise radii for the curves and lets you print layouts. You can also create a working model layout and run up to 16 cars per train, and simulate switches, cargos, destinations, crashes, and more.

Design Your Own Railroad 34.95

BYTEWORKS
Learn to program with the Orca/C compiler and the Learn to Program Tutorial. Includes complete C libraries, extension for IIGS Tool Box and built-in debugger. Easy and fun!

Orca/C 79.95
Learn to Program Bundle 119.95

HYPERMEDIA
Hypermedia is a creative environment where even non-programmers can bring graphics, sound and text together, in an interactive and interconnected way.

NEW!
HyperStudio GS 3.0 ..... 99.95
HyperCard GS 79.95
Tutor-Tech (IIc, IIe, IIGS, Laser 128) 149.95

• School Editions/Lab Packs •
• Teacher Bonus Program •
• Overseas Orders Accepted •

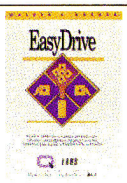
Circle 136 on Reader Service Card.

SOUND & GRAPHICS HARDWARE

APPLE
Apple Video Overlay Card 449.95

APPLIED ENGINEERING
Sonic Blaster 69.95
Audio Animator 179.95

DIGITAL VISION
ComputerEyes IIe 99.95
ComputerEyes IIGS 195.95



QUALITY COMPUTERS
Complete management system for your hard drive. Includes Launcher, Backup/Restore, Index program, ProDOS Guide, and more.
EasyDrive 39.95

PASSPORT DESIGNS
MIDI Interface 99.95

STREET ELECTRONICS
Echo II 109.95

COMPUTERS

APPLE
IIGS CPU w/1 MEG 799.95

LASER
Laser 128EX 387.95
Laser 128 Color System 510.95

PROJECTORS

INFOCUS SYSTEMS
PC Viewer 200S 649.95
PC Viewer 480GS 1,179.95
PC Viewer 1600LC 1,895.95
School P.O. required

ACCESSORIES

APPLE
IIe Enahancement Kit 59.95

APPLIED ENGINEERING
TransWarp IIe 89.95
TransWarp GS 219.95
TransWarp GS w/32K 289.95
TransWarp GS Upgrade 84.95
Conserver 77.95
Power Supply IIe/II+ 79.95
Power Supply IIGS 89.95

KENSINGTON
System Saver IIe 59.95
System Saver GS 69.95
Copy Stand 24.95
Anti-Glare FIlter 39.95
Dust Cover 11.95

MISCELLANEOUS
Cables from 14.95
Disk Holders 9.95
Extended 80 Col. Card 24.95
Switchboxes from 19.95
Keyboard Skins 19.95
3.5" Diskettes (10) 7.95
5.25" Diskettes (10) 5.95
ImageWriter Rib. Blk. 2.95
ImageWriter Rib. 4-C BEST BUY 5.95
Mouse Pad 4.95
Phont Net Connectors 19.95
Screen Cleaner 4.95

NITE OWL
IIGS Battery Kit 14.95

QUALITY COMPUTERS
Power Supply (IIe) 59.95

SMT
No Slot Clock 39.95

ZIP TECHNOLOGY
Zip GS 8/16 199.95
Zip IIe 8MHz 149.95

HYPERMEDIA

NEW!
HyperStudio GS 3.0 99.95
X-Commands 35.95
Clip Art Vol. 1 or 2 19.95
Clip Sounds 19.95
HyperCard IIGS 79.95
Tutor-Tech (All Apples) 149.95

WORD PROCESSING/ DATA BASE/ SPREADSHEET

BEAGLE BROS.
BeagleWrite 48.95
BeagleWrite GS 59.95
BeagleWorks (Mac) 199.95

BRØDERBUND
Bank Street Writer Plus 49.95

QUALITY COMPUTERS
Full-featured, affordable communication. Includes comprehensive macro language, dozens of terminal emulations, and more!
TIC 39.95

CLARIS
AppleWorks 3.0 169.95
10 Pack 949.95
AppleShare version 1,089.95
AppleWorks GS 199.95
10 Pack 1,139.95
ClarisWorks (Mac) 199.95

MICROSOFT
MicroSoft Word (Mac) 279.95
MicroSoft Write (Mac) 82.95
MicroSoft Excel (Mac) 329.95
Microsoft Works (Mac) 189.95

SENSIBLE SOFTWARE
Sensible Grammar 49.95
Sensible Speller SPECIAL! 49.95
Bookends 74.95
Report Card II 42.95

WESTCODE
InWords (OCR) 79.95
Pointless 59.95

WORD PERFECT
WordPerfect IIe or IIGS 109.95
WordPerfect (Mac) 279.95

BUSINESS & FINANCE SOFTWARE

ACTASOFT
Alpha Check Plus 39.95

INTUIT
Quicken 38.95

MANZANITA
BusinessWorks Bundle 299.95
BusinessWorks Payroll 99.95

MECA
Managing Your Money 99.95

COMMUNICATION SOFTWARE

TIC 39.95
ProTERM 3.0 79.95
School Pack 279.95
Point to Point 59.95

EDUCATIONAL SOFTWARE

ORANGE CHERRY — TALKING SHOOLHOUSE
Talking ABC's GS 38.95
Talking Classroom GS 38.95
Talking USA Map GS 38.95
Talking Speller I GS 38.95

THE LEARNING COMPANY
Reader Rabbit 24.95
Talking Reader Rabbit GS 34.95
Math Rabbit 24.95
Children's Writing & Publishing Center 34.95
The Writing Center (Mac) 54.95

BRØDERBUND
Carmen World 25.95
IIGS version 29.95
Macintosh version 29.95
Carmen USA, Europe, Time, or World GS 29.95
The Playroom 24.95
Macintosh version 29.95
The New Print Shop 29.95
Print Shop IIGS 36.95
Katie's Farm or McGee 24.95
McGee at the Fun Fair 24.95
Kid Pix (Mac) 34.95
Science ToolKit 54.95
Sim City (Mac) 32.95
Sim Earth (Mac) 42.95

WEEKLY READER
Sticky Bear Numbers 24.95
Talking Sticky Bear ABC's 29.95
Sticky Bear Typing 29.95
Sticky Bear Math 24.95
Sticky Bear Reading 24.95

MECC
Calendar Crafter GS 32.95
Number Munchers 24.95
Word Munchers 24.95

QUALITY COMPUTERS
RepairWorks rescues you from the grief of damaged AppleWorks files by recovering and repairing those files. InCider Editors' Choice.
RepairWorks 34.95

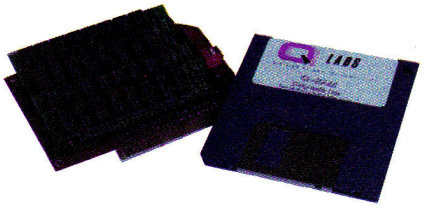
Oregon Trail 24.95
Oreon Trail (Mac) 29.95
Super Munchers (Mac) 29.95
USA GeoGraph GS 54.95
World GeoGraph GS 39.95

DAVIDSON
AlgeBlaster Plus 29.95
Grammar Gremlins 29.95
MathBlaster Plus 29.95
MathBlaster Mystery 29.95
Read 'n Roll 29.95
Spell It Plus 29.95
Word Attack Plus 29.95

IF YOU DON'T SEE IT IN THIS AD
CALL

RELIABILITY, AFFORDABILITY, INNOVATION—QUALITY

The Q-RAM GS



When we could no longer find reliable, affordable hard drives, we made our own—the Q Drive. The Q Drive made Apples faster and easier to use. In fact, it was such a success that we had to wonder why we'd waited so long. Now we've done it again.

Introducing the Q-RAM GS memory card.

The Q-RAM GS is an economical way to add up to 4 MEG of memory to your Apple IIgs. It's fully compatible with all Apple IIgs hardware and software—including the IIgs RAM Disk and DMA peripherals like the Apple II High Speed SCSI Card. And it's so small that it fits in your shirt pocket.

When you install the Q-RAM GS life becomes just a little easier. Programs load completely into memory at startup, eliminating disk swapping. Out-of-memory error messages disappear. You'll have memory to spare—memory to load desk accessories, or to set up a convenient RAM disk.

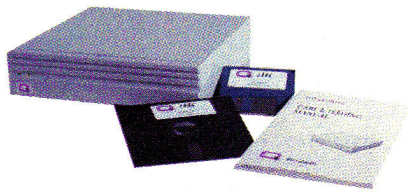
Installation is simple. You can expand a Q-RAM GS by snapping in standard SIMMs—we even include the necessary diagnostic software for your peace of mind. And since the Q-RAM GS uses SIMMs, your memory investment won't go to waste.

Of course, since you're dealing with Quality Computers, you get an unconditional 30-day money-back guarantee and a five-year warranty. And the price is the best news of all—a 2 MEG Q-RAM GS costs about the same or even less than other IIgs memory cards in a 1 MEG configuration!

CAPACITY	PRICE
1 MEG	99.95
2 MEG	149.95
4 MEG	249.95

30-day money-back guarantee • 5-year warranty

The Q DRIVE



Thousands of drives later, experts still are praising the Q Drive for its performance and value. *inCider/A+* gave it a four-and-a-half-star rating. Our customers are using words like "amazing" and "fantastic" to describe the way the Q Drive has changed their computing.

The Q Drive features a fast, reliable Conner mechanism using the latest technology, including auto-parking heads, a voice-coil actuator, and a track buffer. And since the Q Drive uses the industry-standard SCSI interface, you get complete compatibility with your current computer system—and your next, whether it's an Apple II, Macintosh, or IBM.

The Q Drive's plain-English manual doesn't just cover installation and setup. It even tells you how to manage your mass storage effectively. From ProDOS and GS/OS to backups and maintenance, it's all there, including a glossary of hard drive jargon. And no hard drive is easier to set up and use—install a card, connect two cables, and turn on the power. The Q Drive automatically configures itself to match your computer, and the latest system software is already installed.

And remember, you're dealing with Quality Computers, the hard drive leader. The Q Drive comes with a 30-day money-back guarantee and a one-year limited warranty. If you run into a snag, our technical support staff is available for the cost of a phone call. A great drive and great support, at a great price—that's the Q Drive. Find out why it's the best Apple hard drive value—test drive one today!

CAPACITY	w/o Apple SCSI	w/Apple SCSI
40 MEG	389.95	499.95
100 MEG	589.95	699.95
200 MEG	995.95	1,105.95

ALSO AVAILABLE! 45 MEG Removable Drives
Tape Backup Drives • IIc Drives • CD-ROM Drives

Quality Computers™
POWER FOR PERFORMANCE

1-800-443-6697

VISA DISCOVER MasterCard American Express Card

A+ PUBLISHING

PRESIDENT/GROUP PUBLISHER	Paul Boulé
EDITOR IN CHIEF	Dan Muse
EXECUTIVE EDITOR	Eileen T. Terrill
SENIOR EDITOR	Paul Statt
ASSOCIATE EDITOR	Carla SlatonBarker
ASSOCIATE EDITOR	Cameron Crotty
SPECIAL-PRODUCTS MANAGER	Janet Cote
WEST COAST EDITOR	Jeff Cable
CONTRIBUTING EDITORS	Cynthia Field Gregg Keizer Joe Kohn Ruth K. Witkin

DESIGN

ART DIRECTOR	John Sizing
ASSISTANT ART DIRECTOR	Dianne K. Ritson
PRODUCTION MANAGER/DESIGNER/ AD GRAPHICS	Elizabeth Auer

ADVERTISING

SALES REPRESENTATIVE	Diane Maguire (800) 441-4403
ADVERTISING COORDINATOR	Mary Hartwell (800) 441-4403
ADMINISTRATIVE ASSISTANT	Lisa Benway-Caron

CIRCULATION

CIRCULATION DIRECTOR	Megan Lane
CIRCULATION MANAGER CUSTOMER SERVICE	Laurie K. Seamans (800) 289-0619

MARKETING SERVICES/PROMOTION

DIRECTOR OF MARKETING	Peg Brown
MARKETING ASSISTANT	Rita Rivard

CORPORATE PRODUCTION

PRODUCTION DIRECTOR	Sue Gross

CENTRAL SERVICES

SINGLE-COPY SALES DIRECTOR	Linda Ruth (800) 343-0728
NEWSSTAND PROMOTION MANAGER	Debbie Walsh
DIRECTOR OF CREDIT, SALES AND COLLECTION	William M. Boyer
AUDITS AND STATISTICS	Cecile Giguere
FOUNDER	Wayne Green

The Audit Bureau

***inCider/A+* supports a forum on America Online. For information on obtaining appropriate software, call Quantum Computer Services at (800) 227-6345 x5290 or 5291.**

inCider/A+ (ISSN #1054-6456) is published monthly by A+ Publishing, a division of IDG Communications, 80 Elm St., Peterborough, NH 03458. Phone: (603) 924-0100. Second-class postage paid at Peterborough, NH, and additional mailing offices. (Canadian second-class mail registration number 9590.) Subscription rates in U.S. are $27.97 for one year, $43 for two years and $59 for three years. Foreign orders must be prepaid in U.S. funds drawn on a U.S. bank. One year only: Canada $37.97 (price includes GST, #126038405), Mexico $37.97, foreign surface mail $47.97, foreign air mail $82.97. Nationally distributed by International Circulation Distributors. **Postmaster**: Send address changes to *inCider/A+*, Subscription Services, P.O. Box 58618, Boulder, CO 80322-8618. (Send Canadian changes of address to *inCider/A+*, P.O. Box 1051, Fort Erie, Ontario 12A 5N8.)

Circle 136 on Reader Service Card.

Quality Computers Apple Overnight 1-800-443-6697

Quality Computers™
POWER FOR PERFORMANCE

We accept school P.O.'s by phone, mail or fax

IIGS Products From

Seven Hills Software

Express™ ..... 27.95 NEW!

NEW! Printer spooler lets you use your IIGS while you print! Works with GS/OS compatible software. (e.g. AWGS). Requires hard drive

ShoeBox™ ..... 32.95 NEW!

NEW! Organize all your personal & household information in one easy to find location. Includes FREE HyperCard IIGS program ($99 retail value)! Requires 1.5MB & hard disk.

Font Factory GS™ 27.95

NEW VERSION! Resize fonts, create special symbols, improve print quality of word processing and desktop publishing. Convert from Apple II & Macintosh formats to the GS. Requires 768K. "...clearly the Cadillac of the field."—inCider/A+

GraphicWriter III™ 89.95

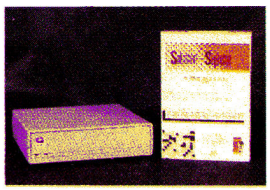
NEW VERSION! Superior desktop publishing with word processing, page layout, and graphics in one complete package! Includes free clip art and font disks. Requires 768K. "Our favorite desktop-publishing program for the GS..."—inCider/A+

SuperConvert™ 27.95

Convert graphics to super hi-res from Apple IIs, Macintosh, IBM, Atari ST, Amiga, Commodore 64/128, and GIF. Change color to B&W or go between 320 and 640 modes. Requires 1MB. "...it can convert virtually any type of graphics file to super hi-res."—inCider/A+

Independence™ 27.95

Independence produces stunning graphics and text with Hewlett-Packard laser and inkjet printers at a faction of the cost of expensive laser printers.



BEAGLE BROS.
Platinum Paint, from Beagle Bros, includes graphic editing features that are easy-to-use and incredibly fast. Compose paintings, signs or color illustrations, import clip art, colorize scanned images, and more! Whatever your graphic needs are, you can do it with Platinum Paint.

Platinum Paint 59.95

• Technical Support •
• Free Enhance Subscription •
• The Largest Selection •

MINDSCAPE

Color Me	29.95
Crossword Magic 4.0	34.95

SOFTWARE TOOLWORKS

Mavis Beacon Typing	27.95
IIGS or Mac version	32.95

SPRING BRANCH

GS Numerics	84.95
Mac Numerics	139.95

ENTERTAINMENT SOFTWARE

QUALITY COMPUTERS

Dark Castle GS	14.95
Warlock GS	14.95
Three Stooges GS	14.95
Rocket Ranger GS	14.95
Star Saga: One	14.95
Tower of Myraglen	14.95
Alien Mind GS	14.95
ANY 3 FOR	***36.95***

OTHER GAMES

Battle Chess GS	32.95
Chess Master 2100	29.95
Cribbage/Gin King	32.95
Cryllan Mission/Scenario	44.95
Crystal Quest GS	32.95
The Duel: Test Drive IIGS	32.95
Grand Prix Circuit GS	28.95
Hover Blade	29.95
Hunt for Red October GS	24.95
Jack Nicklaus Golf GS	32.95
Tetris	27.95
Xenocide GS	32.95

GRAPHICS SOFTWARE

ABRACADATA

Design Your Own Home	44.95
IIGS Versions	59.95
Design Your Own Railroad	34.95

BAUDVILLE

8/16 Paint (IIe, IIc, IIGS)	49.95
Award Maker Plus	29.95
Award Maker Plus 128K	36.95
Libraries	each 19.95

BEAGLE BROS.

BeagleDraw	64.95
GS Font Editor	32.95
Platinum Paint GS	59.95

BIG RED COMPUTER CLUB

Labels, Labels, Labels	28.95

BRØDERBUND

Bannermania	24.95
Kid Pix (Mac)	34.95
The New PrintShop	29.95
Libraries	each 16.95
Print Shop IIGS	36.95
GS Companion	29.95
GS Libraries	each 24.95
VCR Companion	29.95

SEVEN HILLS

Font Factory GS	27.95
GraphicWriter III	89.95

TIMEWORKS

Publish It! 4	89.95
Publish It! Easy (Mac)	149.95
4-in-1 Art Portfolio	79.95

TRIAD VENTURE

Graphic Disk Labeler	24.95

QUALITY COMPUTERS
A rich harvest of more than 300 customization options for AppleWorks 2.0, 2.1, and 3.0. Easy to install and de-install as you wish.
SuperPatch 8.0 ..... 34.95

BEAGLE BROS. TIMEOUT SERIES

DecisionPak	89.95
PerformancePak	69.95
StylePak	79.95
MacroEase	25.95
DeskTools, FileMaster, PowerPack, SideSpread, TextTools, or Thesaurus	32.95
QuickSpell, SpreadTools, or UltraMacros	40.95
SuperFonts, SuperForms Outliner, or Telecomm	42.95
ReportWriter	48.95
Graph	52.95

UTILITIES & LANGUAGES

BEAGLE BROS.

Companion Plus	32.95
GS Desk Accessories	34.95
Program Writer	32.95

BYTEWORKS

Orca/DesignMaster	49.95
Orca/PASCAL, Orca/M, or Orca/C	79.95
Orca Learn to Program	119.95
Orca/Disassembler	29.95
Talking Tools	39.95

CENTRAL POINT

Copy II Plus	25.95

GLEN BREDON

Prosel 8	39.95
Prosel 16	79.95

MICOL

Advanced BASIC IIe	59.95
Advanced BASIC IIGS	89.95

Q LABS

RepairWorks	34.95
SuperPatch 8.0	34.95
EasyDrive or TIC	39.95
Signature GS	29.95

SEVEN HILLS

Independence	27.95
SuperConvert	27.95
Formulate	32.95

SOFTSPOKEN

CrossWorks	69.95

VITESSE

Salvation Series	
Bakkup 2.0	44.95
Exorciser	34.95
Renaissance/ Deliverance Combo	44.95
Supreme (5 modules)	99.95
Harmonie 2.0	32.95

BOOKS

Apple II Enhacement Guide	6.00
Using AppleWorks GS	19.95
AppleWorks Made Easy	19.95
Print Shop Handbook	19.95
Your IIGS Guide	19.95
The Mac Bible	29.95
The System 7 Book	22.95

BUSINESS HOURS

Sales — 1-800-443-6697
Mon-Fri 9AM-8PM Eastern
Sat 10AM-4PM Eastern

Support — (313) 774-7740
Mon-Fri 10AM-12/1PM-5:30PM Eastern

Service — 1-800-443-6697
Mon-Fri 9AM-5PM Eastern

POLICY

- We ship via Federal Express, UPS, DHL, and US Mail. Saturday deliveries available. If order is split, we pay freight on balance of items. Add $3.95 for C.O.D. certified.
- RETURNS: All defective or mis-shipped items may be returned within 30 days for replacement. Items returned with damaged or incomplete packaging will be charged packaging fees. No refunds on software items (unless otherwise specified). Refunds subject to rental fees. Ask about our Rental Program!
- Prices subject to change without notice.
- We accept school P.O.'s by mail, phone or FAX (313) 774-2698.

Quality Computers™
POWER FOR PERFORMANCE

VISA DISCOVER MasterCard American Express Card

1-800-443-6697

Technical Support: (313) 774-7740 FAX: (313) 774-2698
20200 Nine Mile Rd. • P.O. Box 665 • St. Clair Shores, MI 48080

Circle 136 on Reader Service Card.

IT'S HERE NOW!

A New Generation of Talking Software that Captures the Full Power of Mac® and Apple®...

Imagine a "Talking Schoolhouse"

inside your computer – software that offers human voice, stunning high-res graphics, and delightful animation to teach children basic skills. Why fantasize? It's here now, and it's known as the TALKING SCHOOLHOUSE™ SERIES from Orange Cherry Software. Covering all curriculum areas in a creative, new format, this software captivates children from preschool to sixth grade. Programs not pictured here, but also available:

- **Talking ABC's**
- **Talking Addition & Subtraction**
- **Talking Alpha Chimp**
- **Talking Clock**
- **Talking Colors**
- **Talking Multiplication & Division**
- **Talking Reading Railroad**
- **Talking School Bus**
- **Talking Speller I & II**
- **Talking U.S.A. Map**

No Speech Board or Additional Hardware is Required!

CALL TODAY!

Perfect Human Voice

Talking Schoolhouse Software brings the friendly, reassuring voice of a human being into the computer learning environment. Our developers electronically digitize recorded human voice directly into the programs. The result is clear, natural human speech – not a synthesized "computer" voice that only confuses young children.

Super High-Res Graphics

Find out why children, teachers, and parents are amazed and delighted by the full-color original illustrations on every screen. Amusing animated sequences enhance most of these programs, enriching the learning process for children of all ages. Basic concepts come to life through the graphics capabilities of the IIGS and Macintosh computers.

Talking Schoolhouse™ Series

from Orange Cherry Software. The suggested retail price for the 3.5" disk programs are: **Apple IIGS: $49 each, Macintosh: $59 each** (add $10 for school editions). For information, including our CD-ROM programs, contact your dealer or call toll free **1-800-672-6002**. FAX your request to: 914-764-0104.

Circle 237 on Reader Service Card.

inCider A+ Apple II/Macintosh

JANUARY

1992 Vol. 10 No. 1

ARTICLES

30 **Way Cool Mac** by Owen W. Linzmayer
Is your Macintosh quiet, withdrawn, a little drab, perhaps? With a CDEV here and an INIT there, you can customize your computer to make it not only productive, but also fun to be around.

36 **Way Cool GS** by Joe Kohn
Who wants to look at the same old screen every day or go through the same operations time after time? Catch the wave — *customize*. Install some low-cost icons and utilities and wake up your Apple IIGS.

42 **8-Bit Hypermedia: Let Your Creativity Flow** by Joe Kohn
Pull out all the stops — text, graphics, animation, sound, music, speech, video. A quartet of easy-to-use Apple II authoring systems give you all the tools you'll need to design your own interactive multimedia presentations.

COLUMNS

inCider's View • *Dan Muse*
Paradigm Shift 8

Bridging the Gap • *Gregg Keizer*
Tricks of the Trade 20

AppleWorks in Action • *Ruth Witkin*
Easy Does It 48

Press Room • *Cynthia E. Field*
Hot Stuff 56

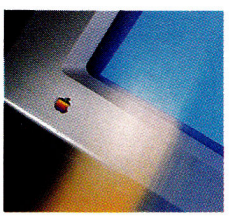
Learning Curve •
David D. Thornburg
Graphic Display 80

DEPARTMENTS

Letters 10

What's New
News, New-Product Focus, Shareware Solutions 14

Apple Clinic
Memory = Storage?
Load Up That RAM Disk,
Sense of Proportion,
Make a Resolution,
In the System,
Missing Printer 18



p. 26

Reviews
SuperConvert 3.01, Swamp Gas, Iraq Stack, Reading Maze, Talking Tools/ORCA Integer BASIC 26

Hints
Count on Us: Enhanced DB File Creator, Unknown Parameter 66

1991 Index 68

Cover Illustration • Ned Shaw

Downloaded from www.Apple2Online.com

PARADIGM SHIFT

Technology, experts predict, will create a more dynamic, interactive classroom.

In the movie *Back to School*, Rodney Dangerfield says he likes teachers because "if you do something wrong, they make you do it again." Probably for a different reason from Rodney's, I also have an affection for educators. I've been around them my whole life. My father was a teacher and school principal and was instrumental in convincing me *not* to go into education; my mother was a teacher's aide; my sister-in-law is a teacher. My college work-study job was cleaning the campus elementary school. (You don't know the meaning of the word *grotesque* until you've cleaned bathroom stalls used by 6-year-olds.) After college I did a six-month stint as a substitute teacher, which was worse than cleaning those stalls.

By DAN MUSE * EDITOR IN CHIEF

Finally, and most importantly, I happen to work for a magazine whose readership is made up largely of educators, so I get an opportunity to view education software, talk to teachers, and attend education conferences. Like Rodney, I admire educators. I respect them enough to know I couldn't do their job. Also, like Rodney, many teachers "don't get no respect — no respect at all." Many educators are still underpaid and undertrained, which is ironic when you realize that teachers are the people who are shaping the future.

I was reminded of this when I attended a session called *Electronic Highways 2004: Renaissance II* at the California CUE (Computer-Using Educators) show in Santa Clara last November. The speaker was *inCider/A+* columnist David Thornburg. The session focused on the "paradigm shift" in education — how educators' roles will change by the year 2004 — and it was quite provocative.

We're moving away from the traditional approach to teaching to which most of us are accustomed. When I was a kid, we sat at rows of desks, and the teacher stood at the head of the class and imparted knowledge. We students spoke only when spoken to and asked questions only when necessary and appropriate. I think that system worked okay. I'm no Einstein, but I managed to retain a little knowledge along the way. Besides, what other way was there then?

Today the personal computer and its associated technologies offer many alternatives. The days of the textbook-toting "sage on stage" are numbered. Textbooks are destined for some time capsule; they'll be replaced by CD-ROMs, laser discs, and other technologies that students will continue to use throughout their lifetimes. Students will become lifelong learners because the technology that carries the information will be exciting.

Today's emerging technologies will let students become more responsible for and more active in their own education. Technology, Thornburg and others predict, will create a more dynamic, interactive classroom. In fact, even the concept of classrooms as we know them might be arcane in the 21st century. When teachers can draw upon CD-ROM, laser discs, cable television, satellite communications, and a host of other exciting technologies, how can we expect students to sit still? What's the point of interactive multimedia if a student has to raise his or her hand to get permission to get up and use it?

Teachers' roles will change, too. Educators will become guides or facilitators, helping students explore information. Rather than demanding that students memorize facts about, say, the Revolutionary War, educators will help them understand those facts and apply that knowledge.

It's true that educators will be challenged to develop new ways of taking advantage of technology. But regardless of how sophisticated and interactive the educational medium, teachers will still be the ones who, when necessary, make the student "do it again," as Rodney says. No technology could ever take the place of the dedicated, caring teachers I've known. Let's hope some things never change. ❑

SAVE 54%

DON'T MISS:

Reviews of educational products for home and school.

Time-saving hints and techniques.

In-depth articles that help you stretch your Apple to the max.

Solutions for your personal finance & home office needs.

Easy and affordable desktop-publishing projects.

DON'T WAIT.

Order your subscription today!

SAVE 54%!

inCider A+ Apple II/Macintosh

☐ Send me 24 issues of *inCider/A+* for $43.00.
I save 54%!

☐ Send me 12 issues of *inCider/A+* for $27.97.
I save 40%!

Savings based on annual single-copy price of $47.40.

Name

Address

City / State / Zip

☐ Payment enclosed ☐ Bill me

4JLA9

Please make checks payable to *inCider/A+*.
California residents add applicable sales tax.
All foreign orders must be prepaid in U.S. funds drawn on a U.S. bank. One year rates: Canada $37.97 (price includes GST/GST Reg. #126038405), Mexico $37.97, Foreign Surface $47.97, Foreign Airmail $82.97.
Please allow 6-8 weeks for delivery.

SAVE 54%!

inCider A+ Apple II/Macintosh

☐ Send me 24 issues of *inCider/A+* for $43.00.
I save 54%!

☐ Send me 12 issues of *inCider/A+* for $27.97.
I save 40%!

Savings based on annual single-copy price of $47.40.

Name

Address

City / State / Zip

☐ Payment enclosed ☐ Bill me

4JLA9

Please make checks payable to *inCider/A+*.
California residents add applicable sales tax.
All foreign orders must be prepaid in U.S. funds drawn on a U.S. bank. One year rates: Canada $37.97 (price includes GST/GST Reg. #126038405), Mexico $37.97, Foreign Surface $47.97, Foreign Airmail $82.97.
Please allow 6-8 weeks for delivery.

SAVE 54%!

inCider A+ Apple II/Macintosh

☐ Send me 24 issues of *inCider/A+* for $43.00.
I save 54%!

☐ Send me 12 issues of *inCider/A+* for $27.97.
I save 40%!

Savings based on annual single-copy price of $47.40.

Name

Address

City / State / Zip

☐ Payment enclosed ☐ Bill me

4JLA9

Please make checks payable to *inCider/A+*.
California residents add applicable sales tax.
All foreign orders must be prepaid in U.S. funds drawn on a U.S. bank. One year rates: Canada $37.97 (price includes GST/GST Reg. #126038405), Mexico $37.97, Foreign Surface $47.97, Foreign Airmail $82.97.
Please allow 6-8 weeks for delivery.

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS MAIL PERMIT NO. 1247 BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

inCider/A+
P.O. Box 50358
Boulder, CO 80321-0358

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS MAIL PERMIT NO. 1247 BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

inCider/A+
P.O. Box 50358
Boulder, CO 80321-0358

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS MAIL PERMIT NO. 1247 BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

inCider/A+
P.O. Box 50358
Boulder, CO 80321-0358

SAVE 54%

DON'T MISS:

- Reviews of educational products for home and school.
- Time-saving hints and techniques.
- In-depth articles that help you stretch your Apple to the max.
- Solutions for your personal finance & home office needs.
- Easy and affordable desktop-publishing projects.

DON'T WAIT.

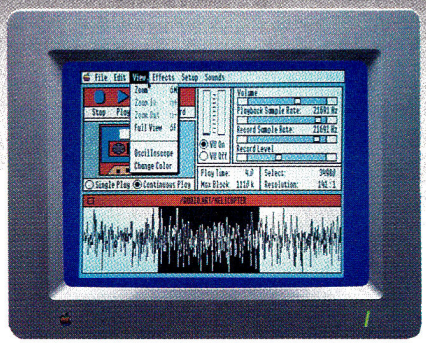
Order your subscription today!

Apple Stuffers

Limited Time Offer On These Selected Products Direct From Applied Engineering!

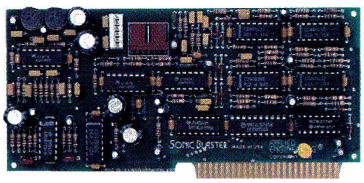
$79

Sonic Blaster



Unleash your IIGS' sound potential with Sonic Blaster, our full-featured stereo digitizer. It records from your stereo, CD player, TV or VCR and plays back in rich, full stereo. The included software features incredible editing functions—echo, stutter, backwards, etc. Hear your games like never before!

Retail Price $129

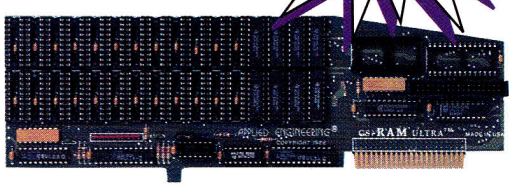


$5

Bonus! Buy the Sonic Blaster at this special price and choose either Tunnels of Armageddon or Vegas Gambler for only $5 (originally $39.95)! *While supplies last!*

$179

GS-Ram Ultra 1Mb

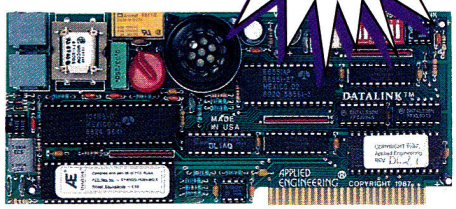


If you use AppleWorks on the IIGS, you need the GS-RAM Ultra memory card. GS-RAM Ultra increase your system memory up to 4 Megabytes! Also includes AppleWorks enhancement software that takes advantage of the extra memory to dramatically enhance the capabilities and speed of AppleWorks 2 and 3.

Retail Price $299

$59

DataLink 1200



Get free software from bulletin boards, access database services and link with other computers with the DataLink 1200 modem for the IIGS, //e and][+. Communications software and more than $200 dollars worth of online offers included.

Retail Price $119

Call Applied Engineering Sales today and take advantage of these incredible prices!

Call (214) 241-6060.

Texas residents add applicable sales tax.

FEDERAL EXPRESS VISA MasterCard

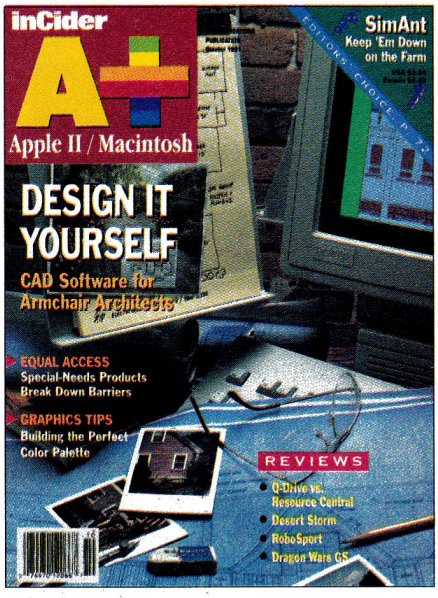
Applied Engineering®
The enhancement experts.
A Division of AE Research Corporation
(214) 241-6060
FAX: (214) 484-1365
P.O. Box 5100
Carrollton, TX 75011

Made IN THE USA

Call Today for a FREE Catalog!

©1991. AE Research, Inc. All rights reserved. Brand and product names are registered trademarks of their respective holders.

LETTERS



MISSED CONNECTION

IN YOUR RESPONSE TO AARON Jennings' October 1991 Apple Clinic question about transferring files between ProDOS and MS-DOS ("Apple to IBM," p. 20), you forgot to mention the product CrossWorks, from SoftSpoken.

James W. Harper
8920 Gunnison Drive
Dallas, TX 75231

SoftSpoken's CrossWorks is available for $99.95. Contact the company at P.O. Box 18343, Raleigh, NC 27619, (919) 870-5604. — eds.

WHERE ARE THEY NOW?

WHATEVER HAPPENED TO THE TurboRez board for the IIGS? And what happened to the *inCider/A+* People's Choice Awards? Will they ever come back? One last question: What's the address of the Big Red Computer Club?

Will Selden
4402 South Ashlawn Drive
Richmond, VA 23221-2534

TurboRez was never released, and now exists mostly in the intermittent cries of diehard believers — kind of like New York State Governor Mario Cuomo's presidential campaign.

AppleWorks was given the People's Choice Trophy in perpetuity for being so darned popular. You can contact the Big Red Computer Club at 423 Norfolk Avenue, Norfolk, NE 68701-5234, (402) 379-4680. — eds.

NEED A NEW CLOCK?

I PURCHASED AN SMT NO-SLOT Clock, and it came with an installer program that's supposed to put the clock drivers into ProDOS. The program won't work with ProDOS version 1.8 or 1.9, however. Is there another way to install the clock, or is there a newer version of the No-Slot Clock?

Adam McKenna
Trenton, NJ

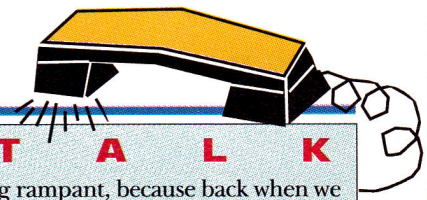
There's a new version of the No-Slot Clock that's compatible with ProDOS versions 1.8 and 1.9. It's available from SMT Inc. for $59.95. Contact the company at 310 Via Vera Cruz, Suite 112, San Marcos, CA 92069, (800) 326-1638. — eds.

MASS CONVERSIONS

I NEED TO CONVERT MY LARGE Apple II database files to my new Macintosh system. Are there any companies that handle this process?

Jan Arowesty
69 Cleveland Avenue
Bay Shore, NY 11706

Try Burke Conversion Service, 841 Shibley Avenue, P.O. Box 515, Park Ridge, IL 60068, (800) 662-6088. — eds.



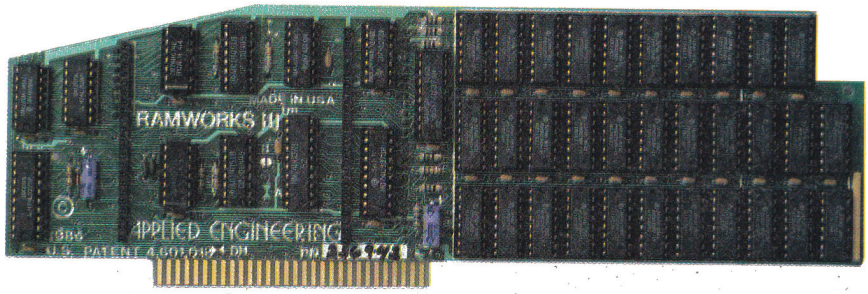
CROSSTALK

Satisfaction with system software must be running rampant, because back when we asked you about it, most of you were silent. We did get a few calls, such as the one from Sharon Mast of Lawrence, Kansas, who wanted true multitasking for her Apple IIGS. Sorry, Sharon, that's probably not in the cards, but we're hoping that Bill Plantier's wish will come true. Bill is from Tallahassee, Florida, and he wants the IIGS Finder to be able to handle Macintosh and MS-DOS disks with the same aplomb that Apple File Exchange does. Are the IIGS System 6 engineers at Apple listening? Finally, Mary Hardson of Athens, Georgia, called to vent her fury at the Macintosh System 7 Compatibility Checker. According to her, it invalidated three-quarters of her software and offered no upgrade options. She's running the programs anyway, and hasn't discovered any major problems. Good luck, Mary!

Wise guys always tell you to establish the price of a new car before you bring up your trade-in. Wonder if you can do that with computers. If Apple offered you a rebate on a new Macintosh in exchange for your Apple II-series (or early Macintosh) computer, would you take it? How much would it have to be?

EMPIRES RISE AND EMPIRES FALL, BUT CROSSTALK WILL ALWAYS REMAIN. CALL US AT (603) 924-0301 AND GIVE US BOTH BARRELS ON OUR LATEST QUESTION. GO AHEAD — WE CAN TAKE IT. TELL US WHO YOU ARE AND WHERE YOU'RE FROM, AND WE'LL PUBLISH THE BEST RESPONSES RIGHT HERE.

RamWorks III™



The best selling, most compatible, most recommended, most expandable card available.

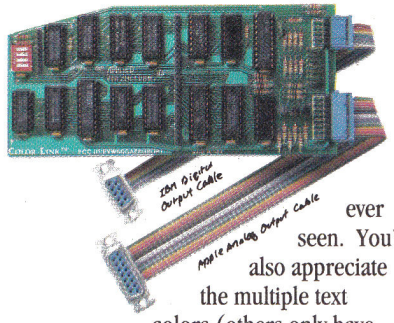
While RamWorks III™ is recognized by all memory intensive programs, NO other expansion card comes close to offering the multitude of enhancements to AppleWorks that RamWorks III does.

A larger desktop is just part of the story. Look at all the AppleWorks enhancements that even Apple's own card does not provide and *only* RamWorks III does. All of AppleWorks (including printer routines) will automatically load itself into RAM dramatically increasing speed by eliminating the time required to access the program disk drive. Switch from word processing to spreadsheet to database at the speed of light with no wear on disk drives.

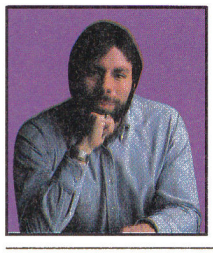
RamWorks eliminates AppleWorks' internal memory limits, increasing the maximum number of database records available. *Only* RamWorks increases the number of lines permitted in the word processing mode. And *only* RamWorks offers a built-in printer buffer, so you won't have to wait for your printer to stop before returning to AppleWorks. And RamWorks auto segments large files so they can be saved on two or more disks. You can even have Pinpoint or MacroWorks and your favorite spelling checker in RAM for instant response.

The most friendly, most compatible card available. Using RamWorks III couldn't be easier because it's compatible with more off-the-shelf software than any other RAM card. But unlike other cards, RamWorks plugs into the IIe auxiliary slot, providing our super sharp 80-column text (U.S. Patent #4601018) in a completely integrated system.

The ultimate in RGB color. RGB color is an option on RamWorks and with good reason. For only $129. it can be added to RamWorks, giving you razor-sharp vivid brilliance that most claim is the best they've



ever seen. You'll also appreciate the multiple text colors (others only have green) that come standard. But the RamWorks RGB option is more than just the ultimate in color output because unlike others, it's fully compatible with all the Apple standards for RGB output control, making it more compatible with off-the-shelf software. With its FCC certified design, you can use almost any RGB monitor because only the RamWorks RGB option provides both the new Apple standard analog and the IBM standard digital RGB outputs (cables included). The RGB option plugs into the back of RamWorks with no slot 1 interference. And remember you can order the RGB option with your RamWorks or add it on at a later date.



"I wanted a memory card for my Apple that was fast, easy to use and very compatible; so I bought RamWorks."

Steve Wozniak, co-founder of Apple

It's got it all.

- 15 day money back guarantee
- 5 year warranty
- Built-in super sharp 80-column display (U.S. Patent #4601018)
- Expandable to 1 MEG on main card (2 MEG expander available.)
- Automatic AppleWorks expansion up to 3017K desktop
- Accelerates AppleWorks
- Built-in AppleWorks printer buffer
- 100% compatible with all standard IIe software
- Compatible RGB option featuring ultra high resolution color graphics and multiple text colors with cable for both the new Apple and standard IBM-type monitors
- Self diagnostic software included
- Takes only one slot (auxiliary) even when fully expanded
- Socketed and user upgradeable
- Used by Apple Computer, Steve Wozniak and virtually all software companies.

RamWorks III with 256K..... $189
RamWorks III with 1 MEG..... $309
RamWorks III with 1.5 MEG..... $429
RamWorks III with 3 MEG..... $629
RamExpander + 1 MEG..... $209
RamExpander + 2 MEG..... $309
ColorLink RGB Option..... $139

Order today! To order or for more information, see your dealer or call (214) 241-6060 today, 9 am to 11 pm, 7 days. Or send check or money order to Applied Engineering. MasterCard, VISA and C.O.D. welcome. Texas residents add applicable sales tax.

Applied Engineering®
The Apple enhancement experts.
A Division of AE Research Corporation
(214) 241-6060
P. O. Box 5100
Carrollton, TX 75011

Made IN THE USA

©1990. AE Research, Inc. All rights reserved. Prices subject to change without notice. Brand and product names are registered trademarks of their respective holders.

APPLIED ENGINEERING

PC Transporter (//e, GS) ✔	269
Power Supply (GS)	89
Power Supply (][Plus, //e)	78
RamWorks III, 1 MB (//e)	194
Sonic Blaster (GS Stereo Card)	69
TimeMaster H.O.	78
TransWarp GS+ (7 MHz/32Kcache)	299
Vulcan 40 MB (GS)	599

AMR

800K 3.5 Drive ✔	189
44 MB Rmvble HD(25ms) w/o SCSI	599
Mini 52Q MB HD (17ms) w/SCSI	549
Mini 105Q MB HD (17ms) w/SCSI	749
Mini 210Q MB HD(17ms) w/SCSI	1249

APPLE

//e Mouse w/Interface Card ✔	119
GS/OS v5.0.4	41
HyperCard GS	84
UniDisk 3.5" Drive ✔	339

APRICORN

Printer Pro (//e, GS Parallel Interface) ✔	49
RAMPro GS, 1 MB ✔	94
Super Serial Pro w/6 ft. Mini 8 Cable ✔	59

BEAGLE BROS.

Companion +	37
Outliner for AW 3.0	41
Platinum Paint (GS)	59
TO SuperFonts	41
TO SuperForms	43
TO UltraMacros	36

CENTRAL POINT

Copy II Plus v9.1	31

CH PRODUCTS

FlightStick	47
Mach III Joystick	31

CLARIS

AppleWorks 3.0	169
AppleWorks GS v1.1	199

CV TECHNOLOGY

RamFAST SCSI Controller (//e, GS)	187

GLEN BREDON

ProSel 16 w/manual	74

INSYNC

Proterm v2.2	79

LASER

Laser 128 Color System	509
Laser 190A Printer	189
Laser Mouse	43
Laser UDC Card ✔	49

MAGNAVOX

1CM135 Color RGB Monitor	288

MCX SOFTWARE

HoverBlade (GS)	29

MEGA MICRO

Lifetime Warranty on All Memory Chips

1 MB x 1 DRAM (set of 8) ✔	49
256K x 1 DRAM (set of 8) ✔	19
256K x 4 DRAM (set of 2)	19

Can't Find It?
Call 1-800-438-2883 for a FREE Buyer's Guide.

PYGRAPHICS

Music Writer	
(Level 2, //e or GS)	199
(Level 3, for //e or IIGS)	399

SENSIBLE

Sensible Grammar	54

SEQUENTIAL SYSTEMS

Meg 80, 1 MB (//e) ✔	149
RAM 80 (80 Column, 64K -//e) ✔	34

SEVEN HILLS

GraphicWriter III (GS)	89

SPECTRUM HOLOBYTE

Tetris (//e, c and GS Versions)	26

SUPRA

2400 Baud External Modem ✔	85

THE BYTE WORKS, INC.

ORCA/M v1.2 (GS Assembler)	87

TIMEWORKS

Publish It! 4(II Desktop Publishing)	89

VITESSE

Harmonie (GS Drivers for HP Printers)	33
Quickie Scanner (//e, GS)	195
Salvation Supreme *(Hard drive owners, this is a MUST utility!)* ✔	95

WESTCODE

InWords (OCR Software)	79
Pointless (GS/OS Scaleable TrueType Fonts) ✔	49

ZIP

GSX (8 MHz/16K Cache)	199
GSX+ (9 MHz/32K Cache)	249
Zip Chip 8 MHz (//e, //c)	149

SCHOOLS – Be Sure to Send Your School Purchase Orders to Roger Coats

Circle 90 on Reader Service Card.

Boldly Offering What No Other Computer Dealer Dares To Offer!

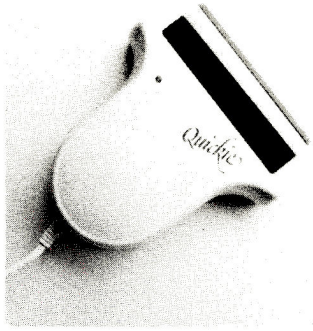
The Logical Scanning Choice – Vitesse Scanner & WestCode OCR Software

Now Together as an Exclusive

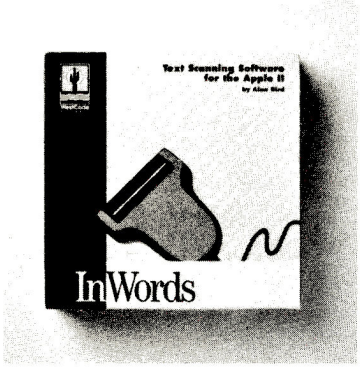
Roger Coats "Out of This World" Deal!

Quickie is the only hand-held scanner for all "slot-equipped" Apple IIs: the IIGS, //e,][Plus, and the Laser 128. Quickie lets you digitize flat page images very quickly in multiple sizes and save all or parts of them to disk in standard Apple II graphic file formats. Quickie is 100% compatible with the incredible InWords optical character recognition (OCR) software. InWords can recognize virtually any typeface, and it can even handle pages wider than the scanner at up to 500 words a minute! Requires Quickie scanner and IIGS or 512K //e.

GET BOTH FOR ONLY $267!



QUICKIE by Vitesse



INWORDS by WestCode Software

MACINTOSH PRODUCTS

For GS Owners with a Mac

APPLIED ENGINEERING
3.5" High Density 1.44 MB Disk Drive 225
Datalink II Express w/v.42bis & Send/R eceive FAX 299
QuickSilver 32K Cache w/68882 (IIsi) 295
Transwarp SE
25 MHz w/25 MHz 882 779
40 MHz w/40 MHz 882 1439

ALDUS CORP
PageMaker v4.01 549

ABRACADATA
DYO Train 34
DYOH Architecture ✔ 62
DYOH Interiors ✔ 62

AMR
1.44 MB 3.5 Drive ✔ 189
44 MB Rmvble HD (25 ms) 599
105Q MB MINI HD (17ms) 649
210Q MB MINI HD (14ms) 1149

APPLE
//e Emulation Card for Macintosh LC 179

CE SOFTWARE
Disktop v4.0 Desk Accessory ✔ 69

CENTRAL POINT
MacTools Deluxe 86

CH PRODUCTS
Roller Mouse ADB 85

CLARIS
CAD v 2.0 649
FileMaker Pro (Database) 219
MacDraw II ✔ 279
Resolve (Spreadsheet) 289

FREESOFT
White Knight (Telecom) 97

HARRIS LABS
The Performer-16 MHz Mac Classic Accelerator ✔ 245
16 MHz 68881 for Performer ✔ 75

MEGAMICRO
1 MB x 8 SIMMs 49

QUARK
QuarkXpress v3.0-Desktop Publishing 559

SENSIBLE SOFTWARE
Sensible Grammar 54

SPECTRUM HOLOBYTE
Tetris 26

SYMANTEC
GreatWorks v1.0 ✔ 215
Norton Utilities for the Mac v1.1 91
Symantec Antivirus for the Mac (SAM) v3.0 ✔ 71

INTRODUCING Roger Coats MASTER HARD DRIVE

You've relied on Roger for the best products at the best price, and now he's got his own line of premium hard drives. Using top-quality Quantum internal mechanisms, these are drives you can depend on.

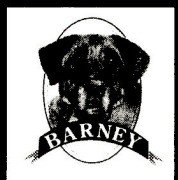
Platinum Case w/Universal Power supply, External Push Button SCSI Selector, Power Cord & Cable. 2 Year Warranty.

Master 52 Q MB Ext. HD w/o SCSI	339
Master 105 Q MB Ext. HD w/o SCSI	479
Master 210 Q MB Ext. HD w/o SCSI	829

✔ CHECK OUT THESE SPECIALS...
for prices that just can't be beat.
And don't forget to call
WEEKLY for the **LATEST HOT DEALS!**

HOW TO ORDER:
Orders only: *1-800-438-2883*
FAX: 1-619-274-2440
15% ($15/min. restocking fee on refunded items only)
Price quotes & technical support:
1-619-274-1253
8am-5pm PST Monday-Friday

Roger Coats



P.O. Box 171466 • San Diego, CA 92197
Circle 90 on Reader Service Card.

OUR FINE PRINT:
We accept the following methods of payment:
• School Purchase Orders • VISA & MasterCard
• Bank Wires • Certified Checks • Money Orders
• NO C.O.Ds • Sorry, No Software Refunds
• Not responsible for product compatibility
• Sorry, no shipping, handling, or insurance refunds
• FOB San Diego • We really appreciate your business!

Committed to Value Since 1985

DRESSED-UP HYPERSTUDIO 3.0

WE FIRST LOOKED AT Roger Wagner Publishing's HyperStudio in 1988, when it was the only Apple IIGS software available that let you combine text, graphics, and sound into integrated hypermedia documents. HyperStudio wasn't the "GS version of HyperCard" — Apple's Macintosh hypermedia toolkit. It was better than that. The bright colors (HyperCard was monochrome) and simplicity (you could create a HyperStudio stack without writing programming code) attracted thousands of buyers.

When Apple brought HyperCard to the GS in 1991, it presented a challenge to HyperStudio. Would buyers continue to choose HyperStudio over HyperCard? A lot of HyperStudio stacks are available, but HyperCard IIGS is official Apple equipment. HyperStudio is easy to use — but HyperCard IIGS has a programming language.

HyperStudio 3.0, the latest incarnation of the software that wants to be nothing less than the savior of the Apple IIGS, shouldn't disappoint anyone. All older HyperStudio stacks still run, and new stacks are still easy to create. But HyperStudio has borrowed two of the best ideas from HyperCard in its self-help program: buttons you can edit after creating them, and a language in which you can write a HyperStudio stack.

In the earlier HyperStudio, you could create a click-on button that would display text or a picture, run a videodisc or CD-ROM, or jump to another screen. But once you created a button, you had to destroy it to change it. It seems like a major flaw now, but in 1988 it was a feature that helped keep HyperStudio simple.

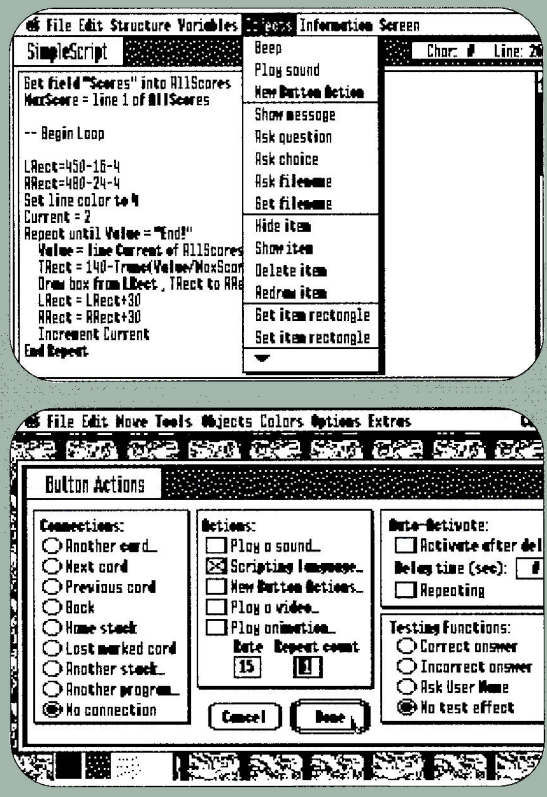
Buttons can now be any size and shape. Irregularly shaped buttons were impossible with HyperStudio 2.1 (or with HyperCard IIGS); even an invisible button had to be shaped more or less like a rectangle. Now a button can have the shape of a lion as easily as the shape of its cage.

The programming language in HyperStudio 3.0 is called SimpleScript. It's designed for those situations in which text-file reading or writing, floating-point math, or drawing the screen is required; you don't need SimpleScript to run stacks. And it isn't the only language available; HyperStudio goes a step further than HyperCard, and lets developers link other languages to it. Mike Westerfield of The Byte Works (Albuquerque, NM) is working on C, Pascal, and assembly language for HyperStudio 3.0.

HyperStudio 3.0 has taken a number of other small cues from HyperCard; it uses pull-off menus, called "windoids." But it exceeds the abilities of HyperCard by using graphics in both 320 mode, for more colors, as well as 640 mode, for greater resolution. This is especially important if you use digitized graphics.

A great many other enhancements should mean that bigger stacks will fit into smaller GS systems. Roger Wagner has said that it's very important to him that stacks be available for 1-megabyte GSes with a single 3.5-inch drive. HyperStudio 3.0 even lets you compress and share sounds, for instance, to fit more into a stack.

HyperStudio 3.0 sells for $179.95. An upgrade from version 2.1 is $50 postpaid ($25 if you bought it after HyperStudio 3.0 was announced on July 15, 1991), from Roger Wagner Publishing, 1050 Pioneer Way, Suite P, El Cajon, CA 92020, (619) 442-0522. **— P.S.**



Top, pull-down SimpleScript menus eliminate typing program code in. Bottom, edit a button at any time.

FIRST • LOOK

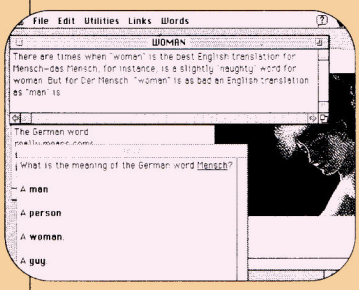
"Apple II" indicates an 8-bit product compatible with IIes, IIcs, IIc Pluses, and IIGses unless noted otherwise.

NEW SOFTWARE

▲

LINK UP

The simplest hypertext imaginable would have to be a plain text file in which you could click on a word and immediately call up text linked



to it. That describes **LinksWare**, a new program for the Macintosh from Tracy Valleau, the author of the GS authoring system Nexus (Editors' Choice, August 1990, p. 100; Reviews, April 1991, p. 76).

Of course you can add graphics files and create hypermedia as well as hypertext, and LinksWare promises CD-ROM and videodisc controllers. But as it is, LinksWare offers educators an opportunity to create programmed learning lessons simply and without fuss, using existing texts.

LinksWare uses Apple XTND technology, which lets you combine files created with different programs, such as Claris' MacWrite, Microsoft Word, and T/Maker's WriteNow, or even on different computers — IIs, GSes, and MS-DOS clones.

Educators who have tried LinksWare praise its "90-second learning curve." All you do is point-and-click on the word you want to link and select the file to which you want to link it. No cards, no stacks, no programming. It's priced at $69.95, from Linksware, 812 19th Street, Pacific Grove, CA 93950, (408) 372-4155.

For more information, circle number 350 on the Reader Service card.

■

DREAM IT

DreamWorld Software has released **DreamGrafix**, the newest Apple IIGS paint program — and the only one that lets you use as many as 3200 colors in a single picture. The color limit for standard GS graphics is 16 per picture.

DreamWorld says that by using the new super-hi-res 3200 mode, you'll be able to display color pictures of photographic quality on your Apple IIGS. But in addition to seeing them on screen, you'll be able to fine-tune and save your images, thanks to powerful tools and editing modes.

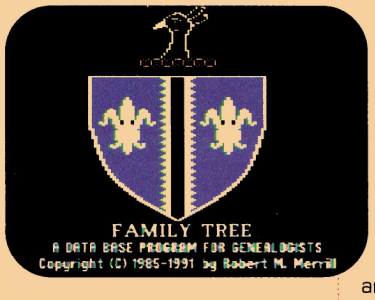
DreamGrafix is written entirely in assembly language for speed, but conforms strictly to Apple programming standards to ensure compatibility with all current Apple IIGS models, as well as future models and operating systems, and all accelerators.

DreamGrafix sells for $99.95, and includes a free color slide-show program called **DreamVoir**. Contact the company at P.O. Box 830, Iowa City, IA 52244-0830, (319) 338-6491. For more information, circle number 351 on the Reader Service card.

◆

ROOTS

Apple II users looking for their ancestors should like **Family Tree**, an inexpensive, easy-to-use program



that imports family data from both AppleWorks database files and the Mormon Church's Personal Ancestry Files.

Family Tree creates pedigree charts as well as descendant charts and family groups. You can save charts as AppleWorks files, each with as many as 700 names. If you need to trace more names, you can link multiple files. Family Tree is priced at $39.95, from Robert M. Merrill, 6180 Via Real #25, Carpinteria, CA 93013-2863, (805) 684-3366.

For more information, circle number 352 on the Reader Service card.

◆

TAX TIME

It starts keeping you up nights every year right after the holidays: your federal income-tax return. Use the power of AppleWorks to save money — this year you can help yourself with the newly expanded 1991 version of **1040Works** ($32.95, $22.95 for owners of the 1990 version) for the Apple II family.

The new 1040Works completes four forms not available in earlier versions, and includes a new menu system that makes navigating

among tax forms easier. It also no longer requires "green bar" paper — you can print forms on plain white stock.

The **1040Works Tax Planner** ($29.95) could make filing your taxes in 1993 and 1994 a breeze. You can estimate your taxes for the next two years, determine how the alternative minimum tax (AMT) will affect you, calculate your withholding and quarterly tax payments, and compare financial strategies to minimize what you pay.

Both 1040Works products require AppleWorks and were written by Phineas Fiske and Dan Verkade, noted AppleWorks experts. They're available from the National AppleWorks Users Group, Box 87453, Canton, MI 48187, (313) 454-1115. For more information, circle number 353 on the Reader Service card.

■

LOCK IT UP

The Apple IIGS Control Panel is a great way to control your computer's speed, screen color, and slot assignments — but what if somebody else is using your computer? Teachers know all too well the problems students "messing with the Control Panel" can cause — but now **LockOut 2.0** returns control to the owner.

This product offers simple password protection that doesn't interfere with the operation of any other desk accessories (NDAs or CDAs). LockOut works on file servers, hard-disk drives, and floppy disks running GS/OS, AppleShare, ProDOS 16, and ProDOS 8, too.

The low $49.95 price tag includes a manual and a site

NEW-PRODUCT FOCUS

license that lets you lock out every Apple IIGS in the building.

For more information, contact SuperStuff, 3382 Sandra Drive, Kalamazoo, MI 49004, or circle number 354 on the Reader Service card.

HOT OFF THE PRESS

Dave Boyle needed a LaserWriter for only one job, to print some Publish It! documents he created.

But when he rented the printer, "they charged me $100 for one day, demanded a $500 deposit, examined my driver's license, then wrote down my license-plate number as I drove off."

If you've ever been treated like a criminal because you don't own a LaserWriter, you'll be glad Dave paid his debt to society by buying a LaserWriter and founding **Apple Hut Publishing**, a print service dedicated to handling Apple II Publish It! files.

The base price is $1 per page, printed on fine heavyweight white paper, suitable for photocopying.

Of course, you can also use papers of different weights and colors, as well as print multiple copies — after all, this is a print service.

Apple Hut prints on the day it receives your order and ships by first-class U.S. mail. A complete catalogue-and-stylebook is priced at $10, a cost that will be deducted from your first order.

For more information, be sure to contact Apple Hut Publishing, 1047 Park Hill Drive, P.O. Box 2704, Escondido, CA 92033, (619) 747-1948, or circle number 355 on the Reader Service card.

WISH BOOK

If you still believe last year's conventional wisdom that "there's no educational software for the Mac," one look at the **Intellimation Library** for the Macintosh should bring you up to date fast.

More than 100 new programs have been added in two free catalogues, one for grades K–12 and one for post-secondary education.

The first volume contains a listing of more than 175 Macintosh programs; the second, about 250. Both offer selected educator discounts.

New programs in the K–12 catalogue include additions to **Educator HomeCard**, the popular HyperCard 2.0 application that helps teachers plan and organize. The new modules are Attendance Keeper, Home-School Communicator, Report Generator, and Substitute Teacher Lesson Planner.

Also new are programs that help you teach kids about **The Vietnam War**, **Shakespeare's Twelfth Night**, and **The Physics of the Atomic Age**, as well as productivity tools such as **Zap-a-Graph** and **Personal Writer**, not to mention the topical **Presidential Election Project** and a new color version of the biology program **MacFrog**.

The post-secondary offerings include a **Mastering Calculus Series** and **The Evolution of Spanish Sounds**.

Both catalogues are available at no cost from Intellimation, 130 Cremona Drive, Santa Barbara, CA 93116, (800) 3-INTELL.

For more information, circle number 356 on the Reader Service card.

SHAREWARE SOLUTIONS * BY JOE KOHN

VIVE LA FRANCE

Last summer four young Frenchmen bound for Cupertino, California, picked up the July 1991 issue of *inCider/A+* at a Paris airport and were intrigued by a "Shareware Solutions" column called "European Connection" (p. 17). It seemed that a group of French programmers, musicians, and graphics artists — the Free Tools Association (FTA) — was writing creative freeware for the Apple IIGS. Reading and rereading that column, Olivier Goguel, Dominique Delay, Pierre Reynaud-Richard, and Dany Bar decided to meet the author of "European Connection" — they were, after all, its subject.

A few days later the FTA made the trek north from Cupertino across the Golden Gate Bridge. When my doorbell rang that afternoon, I was stunned to hear one of the young men introduce the group by saying, "You wrote about us. We're the FTA." I was speechless. I attempted to regain my composure and welcomed them in. We soon disappeared into my computer room, where we talked for a few hours. (Our mutual love of the GS helped transcend the language barrier.) I was treated to a preview of several works-in-progress, a few of which have since been released as freeware.

I learned that the FTA members had also stopped at Apple Computer, where they met with several II engineers and thanked Jim Merritt in person for the ROM 03 computer he'd arranged to have airlifted to them. Goguel, the FTA's chief programmer, uses that machine now, while the rest use ROM 01 GSes. None of the FTA members owns a hard-disk drive or an accelerator card. (Delay admitted that he also owns an Amiga, but pledged that his first love is the GS.)

We talked about **Toolbox**, the French magazine-on-a-disk that has published a number of FTA demonstration music and graphics programs. These demos have never been seen by an American audience, but the group has now decided to release **Animaga** for U.S. freeware distribution. It's a beautiful collection of eight impressive music and graphics animations. My guests also showed me the nearly 800-page book they've written about programming the GS — currently available for sale only in France, although they hope to see it translated into English and published in the United States.

The FTA members were knowledgeable about American public-domain software and shareware for the GS and wanted to see the latest releases. They were impressed particularly by Kenrick Mock's freeware product **Simple Animation Program** (SAP), a remarkable system that lets nonprogrammers create FTA-like animated demos. They marveled at **The Wall**, a Pink Floyd-inspired SAP animation with a thundering rock-'n'-roll soundtrack created by King Lerch. They smiled when I showed them that SAP users can incorporate Sound Smith

songs into animations via **TOOL219**, a GS toolbox routine that just happens to have been written by the FTA.

But the high point of the visit, of course, was getting a sneak preview of the FTA's latest work. **Delta Demo** is the long-awaited followup to Modulae and Nucleus. Like those previous programs, Delta Demo is filled with scrolling text and artistic images of numerous rotating 3D objects — and comes with a fantastic rock-'n'-roll soundtrack. With Delta Demo, it's apparent that the FTA has mastered flicker-free GS animation. Like previous FTA demos, Delta shows off the best graphics and music the GS has to offer. (Please note that the sense of humor in this program is "adult"; it's an R-rated program unsuitable for young GS users.)

The FTA's **NoiseTracker** represents the next generation of GS music software. From its color Control Panel to its NeXT-style recessed buttons and windows, this is the program the GS world has been waiting for. It's fully Sound Smith compatible, so you can use it to listen to your favorite Sound Smith songs, or use your old Sound Smith instrument files to create NoiseTracker music.

But NoiseTracker is no mere Sound Smith clone. It picks up where Sound Smith leaves off; in addition to offering rich music thanks to a 14-track full-stereo sequencer, it lets you create musical compositions you never thought possible on a GS. The FTA has broken Sound Smith's 64K size limitation for instruments, making full orchestral sound possible.

NoiseTracker can also load MOD song files created on the Amiga. Because of that capability, we can expect a huge library of GS NoiseTracker song files to become available shortly. Several of the songs included with NoiseTracker are Amiga MOD files; just use the *Import Amiga* option to listen to them. NoiseTracker also lets you add digitized sound effects to songs; several of the songs included on disk sport wild-sounding voice-overs. In addition, you can alter the volume of fade-ins and fade-outs to create some sophisticated special effects. And what would an FTA program be without animation? If you can find the hidden "Easter egg" command, you can make notes fly around the screen.

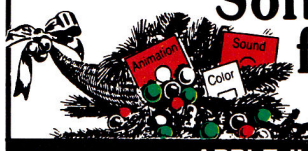
In addition to five great-sounding songs, the FTA has included the **Second Sight Sound Editor**, which lets you load any GS, Mac, or Amiga digitized sound file and create special effects or new instruments. Unlike older FTA programs, you can copy NoiseTracker to a hard drive and launch it from the Finder. It will even return you to the Finder when you exit the program. But because it's a ProDOS 8-based program, it works very efficiently on a GS with a single 3.5-inch disk drive. The self-booting disk runs NoiseTracker in the blink of an eye.

Also on tap from the FTA is **Bouncing Inferno**, a cross between Spin Dizzy and Marble Madness. You use your mouse to direct a marble down multicolored chutes, while trying to pick up important objects to clear each level. Bouncing Inferno has yet to be released, so GS owners have something to look forward to.

Their programming prowess has made the FTA's stature in the GS community legendary; they're among the most acclaimed GS programmers in the world. Their visit was an honor I won't soon forget. ❑

If you'd like to submit your public-domain or shareware programs for review, send disks to Joe Kohn at 166 Alpine Street, San Rafael, CA 94901.

Apple IIGS, Apple IIe, Macintosh



Software Stuffers for Under $10

APPLE IIGS 3½" DISKS

Print Shop™ IIGS Graphics – PDE Exclusives!

☐ **GS156** 100 color pictures of people, faces, clothing* $9
☐ **GS178** 100 pictures of **fonts**, plus **color borders** to frame Xmas cards* $9

☐ ***NEW* GS297, GS298** 30 full-panel color **Christian** graphics* (2 DISK SET) $18

☐ ***NEW* GS299** 15 full-panel color **Holiday** graphics for cards and wrapping paper!* $9

☐ ***NEW* GS300** 60 color **Fairytale** graphics for kids to have fun with!* $9

☐ ***NEW* GS301** 50 color **Borders** to frame Xmas cards or make wrapping paper!* $9

* Requires Print Shop™ IIGS to use.

Graphics/Graphic Utilities

☐ **GS63 Cheap Paint**—full-featured color painting program (768K REQ.) (SHAREWARE†) $9
☐ **GS131, GS132 84 fonts** for desktop publishing, Xmas cards, etc. (2 DISK SET) $18
☐ **GS229 Elfwrite** Easy-to-use with instructions plus 117 fonts! ★***Best Seller*** $9

Games/Entertainment/Education

☐ **GS221,GS222 Cosmocade**—blow away aliens in jungle/space, joystick (2 DISK SET) (SW†) $18
☐ **GS248 Star Trek Classic**—celebrate 25 years of Star Trek—w/this graphic/sound game $9
☐ **GS252 Loderunner.GS**—collect prizes, avoid monsters! $9
☐ **GS271 Milestones 2000**—addictive car racing game! (RELIEFWARE FOR THE HOMELESS†) . . $9
☐ ***NEW* GS287 Dr. Mario**—Kill viruses in Tetris™ style game $9
☐ ***NEW* GS288 Explorer**—enter a world of adventure + magic, create char. + graphics! (SW†) $9
☐ **GS295, GS296** Six **Mean 18™ courses**, new themes like dinosaur trees! (SW†) (2 DISKS) $18

Utilities

☐ ***NEW* GS281 Command Com**—MS-DOS style utilities + Xterm telecom. prog (SW†) . . . $9

Adult Graphics

☐ **GS234, GS237** Gorgeous girls dazzle you (2 DISK SET) (SW†) $18
☐ **GS255** thru **GS262** Sizzling swimsuits, R-rated. 150+, 3200-color graphics **8** disks $49

APPLE II 5¼" DISKS

Apple II New Print Shop™ Graphics

☐ **939** 70+ b/w pictures of animals of every kind!* $5
☐ **1016,1017** 10 full-panel color **Christian** pix.* (2 DISKS) $10
☐ **1018,1019** 10 full-panel color **Holiday** pix.* (2 DISKS) $10
☐ **1020** 60 color **Fairytale** graphics for kids!* $5
☐ **1021** 50 color **borders** for holiday cards!* $5

*Requires New Print Shop™ to use.

Word Processing

☐ **037 Freewriter**: Full-featured word processor (II+ NEEDS PADDLES, LOWER CASE CHIP) $5

Games/Education

☐ **814 Monopoly:** The popular board game! $5
☐ **974 Flobynoid**—great Tetris™ clone, more. (SW†) $5
☐ **976, 977 World of Pinball**—14 games (SW†) (2 DISKS) $10
☐ ***NEW* 1005 Berzap!**—Fight robots & mazes (SW†) $5
☐ ***NEW* 1006 Columns**—Dbl-hires 128K arcade . . $5

Passion

☐ **190,800** X-Rated graphics for adults only (2 DISKS) $10
☐ **961,962 Beach Girl**, more lovely ladies (2 DISKS) $10

Telecommunications

☐ **1002 Agate** ANSI modem program with Zmodem $5

SPECIAL!
Any 6 disks
(IIGS disks may be included)
plus 1 Yr. Membership
Only $39.95
(plus $4.50 s/h)

One Yr Membership **($20 value)**:
- Complete fully-indexed directories of software
  - ☐ Apple II directory describing over 5000 programs, **OR**
  - ☐ Apple IIGS directory describing 1000 programs
- 28 pg qtrly Magazines w/100's of new software selections
- Members-only discounts!
- Plus **6 Disks** of your choice (**ONLY $3.33** each!—only as part of this special)

MACINTOSH 3½" DISKS

☐ **Desktop Publishing Set:** clip art, borders, fonts for biz or holidays (4 800K DISKS) . **$25**
☐ **388 Best of MacWorld Games**—MacTrek, Billiards, Video Poker, Golf, Baker's Dz, more **$7**
☐ **404 Christmas Clip Art**—Santa's wisemen, animals, ornaments, more! **$7**

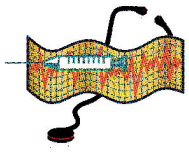
† The author requests a specified donation if you decide to use the program.

Add $4.50 US / $5 Canada / $15 foreign shipping / handling for orders. CA orders add sales tax.
If ordering a **6 disk Special**, please check 1 box: ☐ **Apple II Membership** ☐ **Apple IIGS Membership**
Enclosed $_____ by ☐Check ☐VISA ☐MC
Card No. _____ Exp.____
Name _____
Address _____
City _____ State____ Zip _____

P.D.E.
2076-C Walsh Ave., #799
Santa Clara, CA 95050

CALL TOLL FREE 800-331-8125 • IN CA 408-496-0624

Circle 269 on Reader Service Card.



APPLE CLINIC

MEMORY = STORAGE?

When is a chip like a disk?

Let's jog your memory as we talk about RAM.

BY CECIL FRETWELL

LOAD UP THAT RAM DISK

I USE AN APPLE IIGS AND WOULD like to be able to load programs into the RAM disk automatically upon booting. Can you tell me how to do this?

Russell Rundell
San Pedro Sula, Honduras

I'm afraid I haven't seen any software that will do what you ask. But here's some information that may help you.

A RAM (random-access memory) disk is a section of your computer's memory you set aside (using the GS' Control Panel, or special utility software for folks with IIes) and treat as if it were a disk drive. You can load and save applications and documents, and, as long as the power remains on, you have another peripheral. The problem comes when you shut off the power. Your computer's RAM is "volatile," meaning that it needs electricity to stay intact.

With Applied Engineering's ***RAMKeeper*** *device, you can keep your RAM intact. RAMKeeper provides a RAM-based disk that's backed up by ordinary wall sockets — or a battery, if your house power dies. Unfortunately, AE no longer manufactures this product, but you can check mail-order houses to see if someone still has a RAMKeeper or two collecting dust on the back shelf.*

You could also try the Quality Computers utility ***RamUp*** *(20200 East Nine Mile Road, P.O. Box 665, St. Clair Shores, MI 48080, 313-774-7200, $39.95). When you boot your GS via RamUp, it loads all programs you specify (assuming you have enough RAM). As long as you keep your power turned on, you can retrieve programs at RAM, not disk, speeds.*

Roger Wagner Publishing's ***SoftSwitch*** *(1050 Pioneer Way, Suite P, El Cajon, CA 92020, 619-442-0526, $59.95) is similar. SoftSwitch lets you load an application such as AppleWorks, then stash it away in RAM under its control. You can do this for up to nine applications. Once loaded, you can retrieve an application via the Control Panel, use it, then save it back to RAM to retain its current state. When you switch back to an application, it's as if you never left it.*

SENSE OF PROPORTION

CAN THE IMAGEWRITER II PRINT proportionally sized characters without using *P-1* or *P-2* from the printer-options screen? I've tried setting the DIP switches, but it still won't print smaller than 12 characters per inch.

Raymond Hillard
USAF, Great Britain

Yes, it's possible. Yes, it's difficult. But why bother? According to John Link, author of SuperPatch, you can force proportional-1 (not proportional-2) print if you really want to, but there's an easier way to accomplish what you want.

If you want to force proportional-1 print, rely on your ImageWriter hardware. Apple's ImageWriter Technical Reference Manual *(p. 136) states that if both switch 1-6 and switch 1-7 are closed, the printer will default to proportional-1, otherwise known as P-1.*

The problem you're going to encounter is that SW 1-6 and SW 1-7 are almost always overridden by software commands from AppleWorks. As part of its initializing code in every module, AppleWorks sends a 10-character-per-inch and a 6-line-per-inch command before it prints anything. In the word processor, AppleWorks sends the command just after it prints, as well.

To get around this, set the switches for P-1, *then define a* Custom Printer, *because at least in the word processor, a custom printer doesn't trigger the initializing code sequence. When it comes to spreadsheet and database printouts, though, you're up the creek, because both these modules will trigger the 10-cpi/6-lpi code.*

MAKE A RESOLUTION

WHAT IS DOUBLE HI-RES? CAN you use it in BASIC? Can you BSAVE it as you do hi-res graphics images?

Andrew Schwerin
Bedford, MA

Double hi-res is an Apple II graphics mode that makes 16 colors available for use, and displays 140 colored pixels (or 560 monochrome pixels) wide and 192 rows deep. To achieve this mode, Apple engineers wove a bit map out of two pages of memory — one auxiliary and one main. The first several pixels come from main memory, the next set from auxiliary, and so on.

Because this mode uses auxiliary and main memory, saving and restoring a screen of double-hi-res graphics isn't a simple task that BASIC alone can handle. You'll need to buy one of several commercial graphics packages, such as ***Platinum Paint*** *(Beagle Bros, 6215 Ferris Square, Suite 100, San Diego, CA 92121, 619-452-5500, $99.95) or* ***8/16 Paint*** *(Baudville, 5380 52nd St. SE, Grand Rapids, MI 49512, 800-728-0888), that let you load and edit double- or super-hi-res pictures. Also take a look at the programming hint "Get the Picture," which is a do-it-yourself viewer (September 1989, p. 114).*

IN THE SYSTEM

ABOUT A YEAR AND A HALF AGO, I purchased Paintworks Gold for my Apple IIGS. At that time, I was using System Disk 5.0.2. I now use System Disk 5.0.4 on my hard drive, and I can't get Paintworks to print. How do I go about

getting the program patched to print using this latest system version?

Jim Bradshaw
Naugatuck, CT

Paintworks Gold uses a nonstandard printing mechanism, specific to the drivers for which it was originally created. About the only way to continue printing with it under the new operating system is to copy the old IW.Setup *and* ImageWriter *files to the* Drivers *folder, then select them. Mixing old and new system extensions isn't a good idea; either stick with your current system software or find a new graphics program that can import Paintworks Gold images. Thanks to Scott Gentry for his help answering this question.*

MISSING PRINTER

I DON'T HAVE AN IMAGEWRITER II printer, so I deleted it from my AppleWorks 3.0 printer list and added my model as the first one. Now my documents don't print properly. What did I do wrong?

Jason Holtman
Athens, OH

AppleWorks 3.0 doesn't print properly when the ImageWriter is deleted as the default printer. Use your original disk to recopy AppleWorks and install your printer without deleting the ImageWriter. You can also use ***SuperPatch*** *(Quality Computers, 20200 East Nine Mile Road, St. Clair Shores, MI 48080, 313-774-7200, $34.95) or* ***AppleWorks 3.0 Companion Plus*** *(Beagle Bros, 6215 Ferris Square, Suite 100, San Diego, CA 92121, 619-452-5500, $49.95), which both include patches that fix this problem.*

APPLE CLINIC IS A FORUM FOR ANSWERING YOUR QUESTIONS ABOUT APPLE II AND MACINTOSH HARDWARE AND SOFTWARE. ADDRESS YOUR CORRESPONDENCE TO APPLE CLINIC, *inCider/A+*, 80 ELM STREET, PETERBOROUGH, NH 03458. BECAUSE OF THE VOLUME OF LETTERS, MOST WON'T APPEAR IN PRINT, BUT WE'LL TRY TO RESPOND IF YOU ENCLOSE AN SASE.

CORRECTION

In "Double Reverse," August 1991 (p. 20), we said that issuing an ESC r to your ImageWriter II would produce one reverse linefeed, and then the printer would return to normal. Not so — the printer will remain in reverse mode until you send ESC f.

LOWEST PRICES ANYWHERE!

BEST SERVICE ! NO HIDDEN COSTS!

UNIV & SCHOOL P.O.'S WELCOME!

APPLE IIGS UPGRADES

4 MEGabyte IIGS RAM board.
Fully DMA Compatible .....w/1 MEG $99
Expands ROM 01 & ROM 3 IIgs ...w/2 MEG $149
Fall Special .....**w/4 MEG $229**
AEGS-RAM+ 6 MEG RAM board .w/1 MEG $189
256K RAM SET (8pc) Lifetime Wty $18
256K RAM 3 Set Special (24pc) $49
1 MEG RAM Set (8pc) 5 Yr Wty $55
IIGS Serial/Parallel Converter $59
IIGS replacement Power Supply $75
SoundSystem 2 New 2-Way Amplified Speaker Pair. Put the S in your IIGS $89

IIGS 105 MEG PRO-DRIVE

The fastest Quantum HardDrive (10ms). Complete w/Apple Hi-Speed SCSI Card. BONUS 25 Megabytes of the Best IIGS Public-Domain & Shareware Programs.
PLUG AND PLAY READY! $599

IIe/IIc MEGABYTE RAM

Licensed by Applied Engineering. A 100% replacement for Extended 80 card. Expands Appleworks desktop to 998K and allows instant switching between modules.
Above **w/256K** $89
Above **w/512K** .....**$109**.....**w/1 Meg** $149
Super Expander C Expands IIc to 1152K, Appleworks desktop to 1052K, & allows instant module switching **w/256K** $99
Above **w/512K** .....**$119**.....**w/1 Meg** $159

QUIET COOLING FANS

SuperFan II for II+/IIe. Kensington Style w/surge protect & twin rear AC outlets..... $27
Super Cooler GS for your IIgs. No audio line interference. Internal Mount..... $24

PRO-KEYPAD for IIe/IIc

Numberic data entry made simple. Includes mathematic, decimal & RETURN keys.
PRO KEYPAD for U.S. & European IIe..... $34
PRO KEYPAD for U.S. & European IIc..... $39

APPLE II Plus OWNERS

Run Appleworks on your II+ or Franklin Ace!
NEW Plusworks III will configure any version of Appleworks to run on your computer. One time configure package. Not a pre-boot.
A.W. 1.0-2.1 req. 64K, 80 columns, shift key mod.
A.W. 3.0 req. 128K, 80 columns, shift key mod.
Plusworks III w/complete docs $39
16K RAM BD. Expands II+ from 48K to 64K.. $34
128K RAM BD. Legend/Titan Compatible... $64
DOS/ProDOS Emulator for above 128K BD.. $24
80 Column II+ Board Videx compatible..... $48
Shift Key Modification $7
Lower Case Adapter. Rev. 7 & up $12

FALL SPECIALS

PBC EXTENDED 80 COLUMN CARD for Apple IIe. Expands IIe to 128K (Appleworks desktop to 56K). Super sharp 80 column display, soft switch select 40/80 columns, & Double Hi-res graphics, all built-in! $35
PBC 256K/80 COLUMN BORD IIe. All above features, plus expands your Appleworks 3.0 desktop to 137K .....**INTRO** $79
Super Serial Board 100% replacement for Apple Super Serial Card, this versatile RS232 board can be used for all modems **and serial printers. For II+/IIe/IIgs**..... $48
SSB to Imagewriter I cable 10' $11
SSB to Imagewriter II cable 10' $11
SSB to Modem (Standard RS232) 10'..... $11

MORE SUPER SPECIALS!

Graphic Parallel Board w/6ft cable. Text & graphic screen prints. Versatile graphics including inverse/normal, enhanced, 90 degree rotate & double size print. II+/e/gs.. $44
Parallel Printer Board w/cable. Text print only. Used where graphics is not required.. $35
Z80 CP/M Board Opens the CP/M world for II+/e/gs. Microsoft & Turbo Pscal Comp $34
Joystick III Similar to the Hayes Mach III, with large fire button on stick $24
6 AMP Power Supply. Drop in replacement for II+/IIe supply. Double the amp power!... $49
TV Modulator Connects your Apple II+/IIe to any color or black/white TV..... $15
Serial/Parallel Converter. Connects your IIc to any parallel printer $49
AE Transwarp 3.6Mhz accelerator. II+/e... $99
ZIPCHIP 8Mhz by Zip Tech. IIe/IIc $159

DISK DRIVES!

Disk Drive H/H for Apple II+/IIe..... $119
Disk Drive H/H for Apple IIc/IIc+IIgs $119
Disk Drive H/H Dsy Chainable IIc+/IIgs $139
Disk Controller BD 5.25" II+/IIe/IIgs..... $34
AMR 3.5" Drive $194
A.E. 3.5" Drive $199
Disk Controller BD 3.5" II+/IIe $49
AE VULCAN HARD DRIVES ..... Call
WD40MEG W/H.S. SCSI CARD..... $499

GAMEPORT SWITCHBOX

Switch between mouse & joystick or any two gameport peripherals. Free master cable... $29

COPY II PLUS

The ultimate copy program. For 5.25"-3.5"-Hard drives.
8.4 w/5¼ diskette..... $15

SWITCHBOXES!

Connect 2/4 Computers to One Printer!
Parallel (A/B) 2-Way $25
Parallel (A/B/C/D) 4 Way $35
Serial (A/B) 2 Way $25
Serial (A/B/C/D) 4 Way $35
Mini-Din 8 w/Master Cbl (A/B) 2-Way $35
Mini-Din 8 w/Master Cbl (A/B/C/D) $45

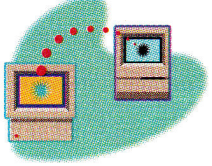
We carry a full line of cables for the Apple II and Mac serieis!..... Call!

5 YEAR NO HASSLE WARRANTY ON ALL PC BOARDS!
CALL or WRITE FOR OUR COMPLETE PRICE LIST!
ADD $4 SHIP-C.O.D. OKAY-VISA/MC NO EXTRA FEE!

PBC

PRICE BUSTERS (619) 589-0081
4233 Spring St., Ste. 402, La Mesa, CA 92041
Monday-Friday 10 a.m.-5 p.m. Pacific Time

Circle 105 on Reader Service Card.



BRIDGING THE GAP

TRICKS OF THE TRADE

There's magic in the air when you, your Mac, and your Apple II team up for file sharing.

By GREGG KEIZER

DO YOU SOMETIMES THINK YOU'D have an easier time getting your computers to work together if you were a magician? Well, you've got a few more tricks up your sleeve than you may realize. With the right maneuvers you can bridge the many chasms that Apple II and Macintosh owners stare into — you can do things like work on the road, divvy up a hard-disk drive, fax AppleWorks documents, or wire up a home-office network. This kind of computer magic will give you the know-how to work in a mixed-up computer world a little more easily.

HIT THE ROAD, JACK!

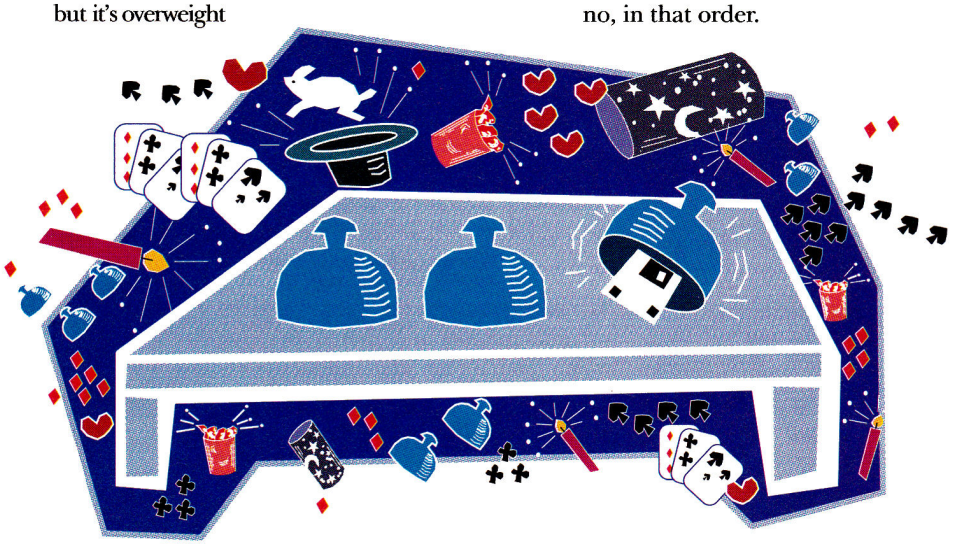
Take it with you — yes, your computer. If it runs DOS, the operating system of choice for about 50 million PCs, you can take your machine along.

Sure, Apple makes a Macintosh portable, but it's overweight and overpriced. Sure, at press time Apple had just announced two new, lighter Mac portables made in cahoots with Sony, but most of us won't be able to afford those, either.

DOS practitioners have had inexpensive, compact, and lightweight portable computers for years. If you want to toss a 4 to 5 pound notebook in your briefcase or book bag, and not toss a lot of money on the table, you need to look at notebook-style computers from makers with names such as Toshiba, ZEOS, and Everex.

Toshiba's **1000LE**, for instance, is a hard-drive-equipped midget that handles most on-the-road chores, such as writing, gathering e-mail, scheduling, and number crunching. Shop around and you'll find it for around $1450 to $1500 direct.

But if you walk out the door with a DOS notebook under your arm, must you learn DOS, too? Do you need to buy a whole new library of applications? Sort of, and no, in that order.



If you're leaving AppleWorks behind, you can put **SuperWorks** on your notebook instead. This AppleWorks look-alike includes the familiar word-processor, spreadsheet, and database modules. (For details, see the November issue's review section, p. 23.) The desktop looks the same, keystrokes are identical (except that the notebook's *alt* key steps in as the open-apple replacement), and AppleWorks files adapt flawlessly. In fact, once you connect the notebook with your Apple II or IIGS via the machine's serial ports (you'll need to search out a cable with the correct ends, or have one built), you can even move existing AppleWorks files to the notebook, then use them in SuperWorks.

But you can't go the other way. You can't turn SuperWorks files back into AppleWorks, a catastrophic flaw if you want to combine your home-based and on-the-road efforts.

That's why another bridge makes more sense. Once you have your notebook, buy a copy of **Microsoft Works** for the PC, then add **Cross-Works**, a file-transfer and translation utility, to your Apple II.

Like SuperWorks, Microsoft Works includes a word processor, spreadsheet, database, and communications program. Unlike SuperWorks, though, Microsoft Works uses a distinctly different-looking interface. But it's not tough to master. Each module has at least as much power as the corresponding AppleWorks function; just don't expect a feature-for-feature match.

The cornerstone of this bridge is Cross-Works, the only Apple II-to-PC translation/transfer package. It includes a cable to connect the two machines, and software for both systems. With Cross-Works, you can move AppleWorks files from the Apple II intact to the notebook, work with them there, then when you get back home, transfer the resulting Microsoft Works documents back into AppleWorks on the Apple II.

Microsoft Works can pinch-hit as a portable bridge if you're using a Mac, too, though you'll be disappointed if you do

Illustration • Elizabeth Auer

anything more than write on the road. Write with Works on the notebook, then save your work as a text file to a PC-formatted 3.5-inch floppy disk (most notebooks sport a floppy-disk drive as well as a hard disk). When you're back home, stick the disk in the Mac's drive, run *Apple File Exchange*, and turn the document into something the Mac can recognize. From there you can open it with any Mac word processor. You can shift Mac documents to the notebook simply by reversing the procedure.

DIVIDE AND CONQUER

Another trick to get your machines working together is to use a removable-cartridge hard-disk drive — but there seems to be some controversy surrounding this method. Back in September's column ("Share the Wealth," p. 26), I said that the only way to share a hard-disk drive with an Apple II and a Macintosh was to use a removable-cartridge hard-disk drive, such as TMS Peripherals' **ProR45**.

Craig Peterson of Santa Monica said I was wrong, dead wrong. "I was disappointed that you didn't mention the ability to share a single fixed hard drive between the Mac and the Apple II. I know this is possible — I've done it," said Peterson.

He then outlined how he went about sharing a hard-disk drive with Apple and Mac machines. According to Peterson, the process requires partitioning the drive with both Apple II and Mac hard-drive formatting/partitioning software, such as Apple's *Advanced Disk Utility* for the IIGS (part of the GS/OS operating-system software that comes with your computer) and *SC HD Setup* for the Mac (part of its operating software). By divvying up the disk between the IIGS and the Mac, he shared one drive with two computers, and cut costs.

I couldn't get my hard-disk drives to split their personalities, no matter what hoops I jumped them through. All I managed to do was turn several drives into devices that either the IIGS or the Mac couldn't (or wouldn't) recognize.

A phone call to TMS Peripherals' technical support confirmed my experience. A TMS representative said he didn't know anyone who shared a fixed drive. "It's the biggest reason we sell so many removable drives," he claimed.

Splitting a single large hard-disk drive and sharing it with different kinds of computers seems close to a computer user's Holy Grail. If you've managed to duplicate Craig Peterson's magic, how about sharing your sharing strategy with the rest of us? Drop me a line, describe the process and the software you've used, and I'll put my collection of Apple IIs, Macs, and hard-disk drives through the paces.

The point may soon be moot, though. **System 6.0** for the Apple IIGS is slated to include an updated *Advanced Disk Utilities*, which will, among other things, make it possible to place a Mac driver partition on a hard-disk drive, so that you can take one drive from Mac to Apple IIGS, and back. As soon as System 6.0 is available (perhaps even by the time you read this), we'll take a walk through its bridging capabilities.

THE APPLEWORKS FAX

The next trick is for those of you who want to join the big leagues of business. You're out in the low-tech cold if you don't have a fax machine. At least that's how it feels when someone calls and wants something from you right now, this very minute.

Bridging the gap between the text on screen and a client a thousand miles away is possible — without plunking down $400 to $500 for a stand-alone fax machine. You can even keep using AppleWorks.

All you need is a modem and an account with almost any on-line service. America Online, for instance, lets you fax a text document from your Apple for $2 a page. Trouble is, that's almost as expensive as one of those copy shops or mail centers that send faxes on a per-page basis.

Less expensive — assuming you fax more than five pages a month — is **MCI Mail**. Primarily an e-mail service for businesses, MCI Mail also lets you send faxes from your computer. For a flat-rate of $10 per month, you can fax as many as 40 pages — that's only 40 cents a page.

And because MCI Mail doesn't demand special software, you can use the communications program with which you're comfortable. Even the minimalist AppleWorks GS module works fine. And if you're using a Mac as well as an Apple II, you can fax from there, too — with any communications software and any word processor.

Compose your message, then if you're using AppleWorks or AppleWorks GS, save the work as a text file. In AppleWorks, that means printing it to disk as a text file: Hit Open apple-P to print, then pick *A text (ASCII) file on disk*. Because MCI Mail requires a carriage return at the end of each line, select *Returns after each line* from the next list. If you're using AppleWorks GS, simply pull down the *File* menu and choose *Save As*. Click on the *As ASCII text* button. Because AppleWorks GS doesn't put returns at the end of each line, you have to do that manually before you fire up your communications program and send the file as a fax. MCI Mail even connects through an 800 number — there's no additional connect-time charge or long-distance phone tolls to pay.

On-line faxing lets you step up into the big leagues and get even more out of your Apple II or Mac without a big investment.

WIRED UP

Connect an Apple II and a Macintosh, and you can share files at the touch of a key or the click of a mouse. System 7.0 software even lets you set aside part of the

PRODUCT INFORMATION

America Online
Quantum Computer Services
8619 Westwood Center Drive
Vienna, VA 22182
(703) 893-6288
$5.95 monthly membership
$10/hour prime time
$5/hour nonprime time

Cross-Works
SoftSpoken
P.O. Box 97623
Raleigh, NC 27624
(919) 870-5694
$99.95

GS/OS System 6.0
Apple Computer
20525 Mariani Avenue
Cupertino, CA 95014
(408) 974-1010
price undetermined
at press time

MCI Mail
(800) 444-6245
customer service
$10/month

Microsoft Works
Microsoft Corporation
One Microsoft Way
Redmond, WA 98052-6399
(800) 426-9400
(206)882-8080
$295

PhoneNet
Farallon Computing
2000 Powell Street
Emeryville, CA 94608
(415) 596-9100
$75/connector box

ProR45
TMS Peripherals
1120 Holland Drive
Suite 16
Boca Raton, FL 33487
(800) 626-6347
$489

SuperWorks
Remarkable Technologies
245 Pegasus Avenue
Dept. SW
Northvale, NJ 07647
(201) 784-0900
$199

Toshiba 1000LE
Toshiba America
Information Systems
9740 Irvine Boulevard
Irvine, CA 92718
(800) 457-7777
$1799 suggested retail

Mac's hard-disk drive as a storage area for select Apple IIGS programs.

Making those cabling connections, though, may take some time, especially if you're trying to get machines in different rooms talking. You have a Macintosh and an Apple II at home, for example, but they're in different parts of the house. No home is a computer lab, with pull-up floors and false ceilings where you can run cabling easily. You need something less invasive. You can set up a LocalTalk network using Apple's own cable and connectors, but you'll have an easier time of it if you turn instead to Farallon's **PhoneNet** connectors.

PhoneNet links its connectors with phone wire. In fact, in many cases you can connect computers with the wiring already in place; PhoneNet sends its signals across a pair of often-unused wires in the line.

But the safest way is to add a phone line dedicated to computer connection. You don't have to call an expensive technician; you can handle it yourself as long as you manage a screwdriver, needle-nose pliers, and a staple gun (and maybe an electric drill).

Before you shop for supplies, measure the distance between each pair of computers, or computer and printer. Remember, you'll probably run the wire along the wall. Count the number of workstations in the network by adding up computers and printers. That's the number of modular phone-jack boxes you'll need.

Head to Radio Shack. Buy the phone wire in 100-foot rolls if possible — it's much less expensive than the precut lengths (which usually are too short for cabling like this). Toss in the necessary number of phone-jack boxes; the kind you screw to the wall are the easiest to install.

Back home, attach one phone-jack box to the wall, near the floor, at each computer or printer location. Strip the insulating wire from one end of the phone line and connect the four wires to the four terminals inside the box; the yellow, red, black, and green wires fix to the clearly marked terminals.

Run the phone wire to the next box and repeat the process. Sometimes you can tuck the wire under the carpet where it meets the wall; other times you'll want to staple it to the wall, just above the floor and out of the way. If you need to go from one floor to another, take the phone wire to a corner, and with a long drill bit, bore a hole down (or up) to the next floor. When you've got all the wire in place and all the phone-jack boxes attached and connected, plug the modular phone-jack end of each PhoneNet connector into a box, then plug the other end of the connector into a printer, Mac, Apple IIGS, or Apple II Workstation Card installed in an Apple IIe.

Setting up your home office may be hard work (it may take four to six hours), but once you've got the wires in place, you can work some bridging-the-gap sleight of hand. ❑

WRITE TO CONTRIBUTING EDITOR GREGG KEIZER AT 4420 HILYARD STREET, EUGENE, OR 97405. ENCLOSE A SELF-ADDRESSED, STAMPED ENVELOPE IF YOU'D LIKE A PERSONAL REPLY.

MS-DOS APPLEWORKS*

Breakthrough For AppleWorks Users!

*inCider/A+ Magazine August, 1991

THE BEST INTEGRATED PC PACKAGE YET

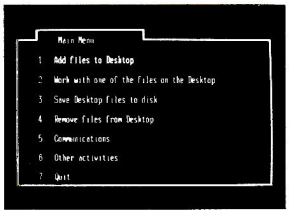
Remarkable Technologies announces a breakthrough product which delivers AppleWorks power on an IBM PC or compatible. SuperWorks allows AppleWorks users to step up to a PC **along with all their AppleWorks files,** utilizing AppleWorks work-alike integrated software.

New features provide full and complete integration of all its capabilities including; spreadsheet (with 3-D capability), database (the easiest to use and one of the most powerful anywhere), word processing (a dynamic and full capability communications package) plus unlimited keystroke macro capability. **It takes only 160K** in RAM. In addition, SuperWorks allows you to work with your AppleWorks file on an IBM PC.

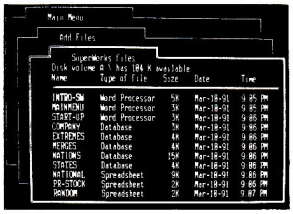
As a special introductory offer to **inCider** readers, SuperWorks will be made available at the special price of $199.00 (plus $5.00 shipping and handling). SuperWorks has a regular retail price of $400.00. Send check or credit card information with order form at right to Remarkable Technologies, 245 Pegasus Avenue, Dept. SW, Northvale, NJ 07647. Phone: 201-784-0900 Fax: 201-767-7463

30 DAY MONEY-BACK GUARANTEE

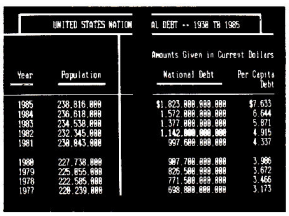
* Appleworks is a Registered Trademark of Apple Computer & Claris Corporation. * MS-DOS & Microsoft Works are Trademarks of Microsoft Corporation.



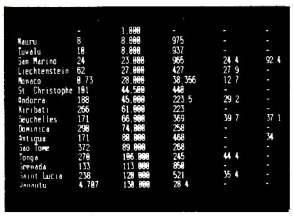
MAIN MENU



FILE MENU



SPREADSHEET



DATABASE

PAYMENT MUST ACCOMPANY THIS ORDER IM192

☐ ☐ ☐ EXP. DATE_____

CARD NUMBER_____

SIGNATURE_____

NAME_____

COMPANY_____

ADDRESS_____

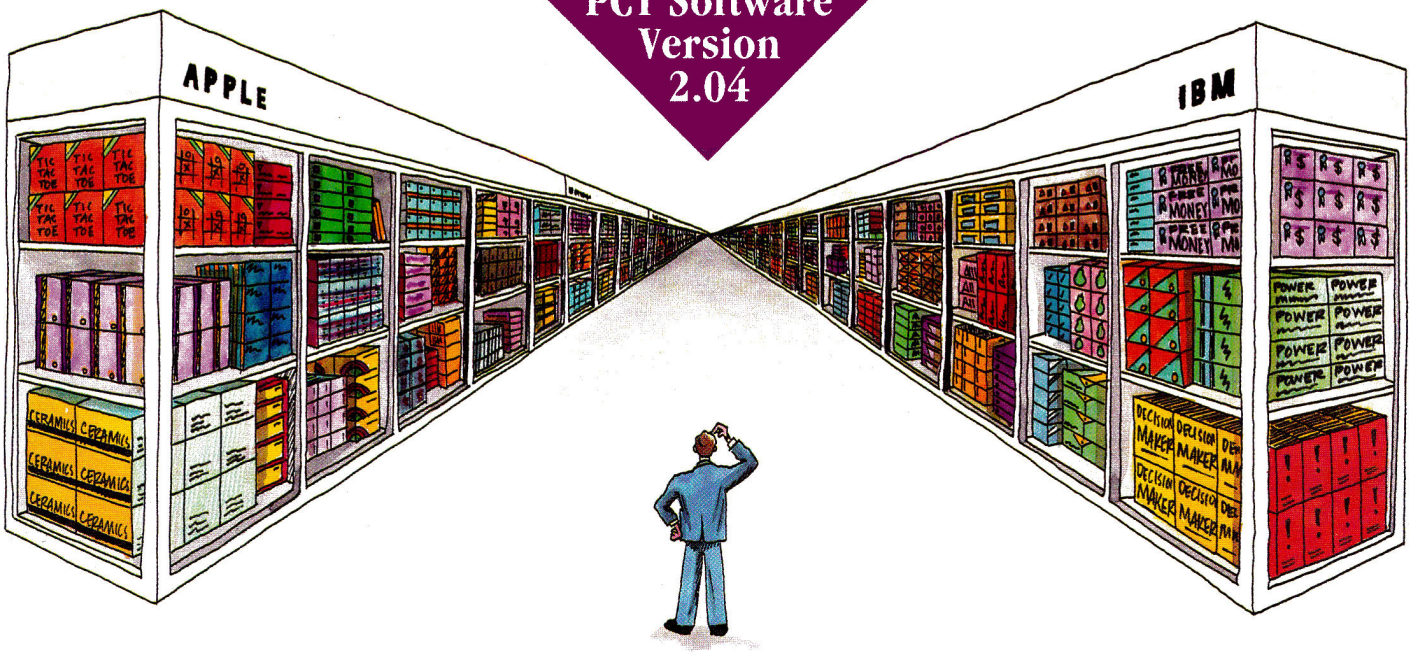
CITY_____

STATE_____ ZIP_____

Circle 33 on Reader Service Card.

Now Shipping!

PCT Software Version 2.04

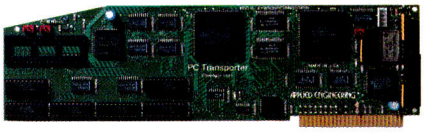


Shop both sides of the software aisle.

You've been there, right? You walk into your computer store and find exactly the software you want - on the wrong side of the aisle. The IBM side. Now for a fraction of the cost of an IBM clone, your Apple II has the power to run virtually all MS-DOS programs.

And your Apple IIGS, IIe or II+ will run those programs at more than *three times the speed* of an IBM XT. Run Lotus 123, dBASE III PLUS, Symphony, Microsoft Works, Flight Simulator and thousands of other titles you can't get for your Apple II!

Works with your Apple's peripherals. PC Transporter was designed to take full advantage of the Apple-compatible peripherals you already own. So you won't need an extra printer, monitor, mouse, modem or hard disk. They can all be used for either MS-DOS or ProDOS. And you can switch back and forth instantly, even transfer files from ProDOS to MS-DOS and back again.



Your Apple-compatible peripherals and PC Transporter not only work together, you get faster operation and better quality graphics, since your Apple analog monitor is sharper than IBM-standard digital monitors.

PC Transporter works as a universal disk drive controller, enabling your Apple or AE 3.5 Drive to run MS-DOS or ProDOS and to shift instantly between the two. If you need 5.25 MS-DOS capability, our optional 5.25 IBM format drives enable you to access 5.25 MS-DOS disks and will also store ProDOS.

Discover thousands of new titles you couldn't run at home before. Exchange ProDOS and MS-DOS files with your friends and co-workers. Store IBM programs on any ProDOS storage device including the Apple or AE 3.5 Drive, Apple UniDisk 3.5, Apple or AE 5.25 Drive, Vulcan, SCSI or ProDOS compatible hard drives.

Easy to install and use. PC Transporter was designed by the experts so you don't have to be one to use it. We include clear, understandable installation instructions, pre-boot software and even an installation video to help.

The do-everything computer. Turn your Apple into a fast, powerful tool that'll change the way you think about shopping for software. And know that Applied Engineering stands behind PC Transporter with a full one-year warranty. Then get out there and start shopping both sides of the aisle!

PC Transporter with768K.....$349
IIGS Installation Kit.....$49
IIe/II+ Installation Kit.....$39
Optional 5.25 IBM Format 360K Drive Systems
Single-Drive System.....$259
Dual-Drive System.....$389

Order today!

To order or for more information, see your dealer or call (214) 241-6060 today, 9 am to 11 pm, 7 days. Or send check or money order to Applied Engineering. MasterCard, VISA and C.O.D. Welcome. Texas residents add applicable sales tax.

Applied Engineering®
The enhancement experts.
A Division of AE Research Corporation
(214) 241-6060
P. O. Box 5100
Carrollton, TX 75011

Made IN THE USA

©1990. AE Research, Inc. All rights reserved. Prices subject to change without notice. Brands and product names are registered trademarks of their respective holders.

Why Wait? Preferred Computing

FEDERAL EXPRESS

GOLD!

Vulcan 40 & 100MB

The Cadillac of Apple hard drives, given a "5-star" rating by *InCider*. Vulcan comes complete with a heavy-duty power supply, 16-bit ultra-fast controller (GS), built-in CDA, pseudo-slotting, and support for GS/OS, ProDOS, DOS 3.3, Pascal 1.3 & CP/M.

— Up to 9 times faster at the same low price —

Vulcan 40MB *$569*
Vulcan 100MB *$949*

MEMORY EXPANSION

Applied Engineering
GS-Ram III 1MB (GS) $139
GS-Ram III 2MB (GS) $199
GS-Ram III 4MB (GS) $319
GS-Ram Plus 1MB (GS) $205
GS-Ram Plus 2MB (GS) $292
GS-Ram Ultra 1MB (GS) $189
SPECIAL! — RamWorks III 1MB. Run AppleWorks up to 20 times faster! The most popular IIe memory board ever. Expandable to 3MB and accepts RGB option for adding inexpensive RGB monitor. Only $185
RamFactor 256K (IIe, II+) $175
RamFactor 1MB (IIe, II+) $264
Ram Express II 256K (IIc, IIe+) $146
Ram Express II 1MB (IIc, IIe+) $205
Z-Ram Ultra 2 1MB (with clock) $285
Memory Chips
1MB Chips (bank) $59
256K Chips (bank) $24

ACCELERATORS/COPROCESSORS

TransWarp GS (Make your GS 2 1/2 times faster!) $229
TransWarp GS w/32K Cache $299
TWGS 32K Cache (Make your TransWarp GS 22% faster!) $79
TransWarp (Original accelerator for II, II+ and IIe) $99
Z-80 Plus (Run Apple CPM programs on GS, IIe or II+) $131

Fax in Your School P.O.!
(214) 247-8151

PC TRANSPORTER CORNER

"Only Preferred Computing has the Combo TransDrive! Run 360K & 720K disks on your PC Transporter for only $289! Or turn your TransDrive Single into a Combo for only $99!"

PC Transporter *$239*
IIGS Kit $36
IIe/II+ Kit $29
MS DOS 4.01 ..... $85
TransDrives
Combo 5.25" & 3.5" reads & writes 360K & 720K $289
Dual 5.25" $284
Single 5.25" $189
3.5" 720K Add-on $99
5.25" Add-on $125
PCT Peripherals
101 Key Keyboard with cable $79
Keytronics ADB Keyboard $139
Headstart Digital Monitor w/ cable $169
Intel 8087-2 Math Chip $139

PCT Specials

PCT Computing's PCT Guide — *NEW!* Filled with helpful hints for PC Transporter owners. Learn the *Easy Way* to set up your hard drive, configure your mouse, printer or modem, and much more.
Special! Only *$8.95*
(Or *FREE* with purchase of any item listed in PC Transporter Corner.)

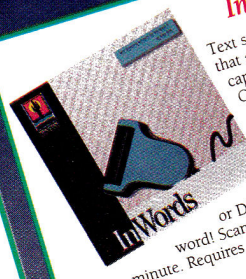
PREFERRED COMPUTING HOLIDAY SPECIALS

Applied Engineering 3.5" Drive

Finally, a low cost, fully compatible 3.5" 800K drive. Features high quality Sony drive, molded cable and daisy-chain port. Or, double your storage capacity with the AEHD 3.5" drive that includes all the features of the 800K drive, plus 1.6MB capacity!

AE 800K 3.5" Drive $189
AE 1.6MB 3.5" Drive $237

InWords

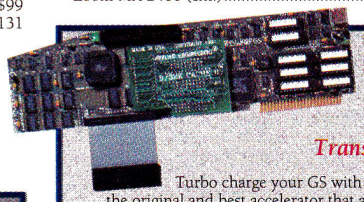


Text scanning software that adds OCR capability to the Quickie Scanner. With InWords, you can scan printed text into your favorite word processor, database or DTP file without typing a word! Scans up to 500 words per minute. Requires Quickie Scanner and IIGS or 512 IIe

InWords with Quickie Scanner $269
InWords $78

COMMUNICATIONS

Applied Engineering
Special! — DataLink 1200. Complete with software and free on-line time. Blowout Price $39.95
DataLink 2400 bps (int.) $160
DL 2400 w/SendFAX! (GS) $199
DataLink Express 2400 (ext.) $169
New! Ready Express w/v.42 (9600) and ReadyLink $239
DL/X 2400 w/MNP-5 & FAX $239
ZOOM Modems *7 Year Warranty • Parts & Labor*
Zoom MX 2400 (ext.) $98



TransWarp GS

Turbo charge your GS with TransWarp GS, the original and best accelerator that almost triples your system's speed! Now even faster than before with the new TWGS 32K option. Let your GS cruise at *warp* speed with the TransWarp GS!

TransWarp GS *$229*
TransWarp GS with 32K Cache *$299*
32 Cache Upgrade *$79*

Zoom/Modem V.42bis $199
Zoom Pack — includes MX2400, ReadyLink & Cable $129
Macintosh
DataLink LC $229
QuadraLink Multi-Port Serial Board for Mac II's $199

RGB MONITORS/VIDEO

Applied Engineering
ColorLink RGB (for RamWorks) $103
SPECIAL! IIe Power/RGB package — includes RamWorks III 1 Mb, RGB card & Headstart M1152C RGB color monitor. Only $399
Magnavox
CM135 Analog/Digital RGB Monitor (includes digital cable-IIe, GS) $289
IIgs Analog Cable $25

PRINTERS/INTERFACES

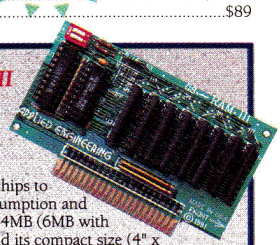
Applied Engineering
Parallel Pro $77
SPECIAL! Parallel Pro w/32K Buffer $119
Serial Pro $99
Panasonic
KXP 1180 ..... $199.50
Seikosha
SP-2000AP (Imagewriter compatible) $249

ADDITIONAL HARDWARE

Applied Engineering
Audio Animator (GS) $169
Conserver Fan (GS) $77
Phasor (GS, IIe, II+) $77
Special! Sonic Blaster (GS) $59.95
TimeMaster HO (GS, IIe, II+) $79
IIe/II+ Power Supply $59.95
IIgs Power Supply $89

NEW!

GS-Ram III



Applied Engineering's GS-Ram III uses the new low cost, high performance 1MB x 4 chips to ensure low power consumption and less heat. It expands to 4MB (6MB with AE's 2MB expander) and its compact size (4" x 2.5") leaves plenty of room for other peripherals.

GS-Ram III 1MB *$139*
GS-Ram III 2MB *$199*
GS-Ram III 3MB *$259*
GS-Ram III 4MB *$319*

MasterCard

VISA

Call Today For a FREE Catalog, or to Place Your Order:

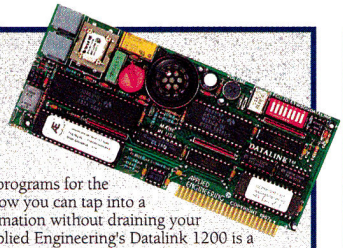
1-800-327-7234

Hours: Monday-Friday 9:00am to 6:00pm CST.
P.O. Box 815828 • Dallas, Texas 75381 • FAX (214) 247-8151

has it in stock at a great price!

FEDERAL EXPRESS

BLOWOUT!



Datalink 1200

Download thousands of programs for the cost of one! Now you can tap into a world of information without draining your resources. Applied Engineering's Datalink 1200 is a complete telecommunications system that includes modem, software, phone cable and $200 worth of free memberships and online time!

DataLink 1200 Blowout Price! $39.95

CH Products
- MACH III Joystick $39
- MACH IV Plus $69

Kensington
- System Saver (II+, IIe) $69
- System Saver GS $75
- Turbo Mouse ADB (GS, Mac) $124
- Turbo Mouse IIe/IIc+ $79.95

KeyTronics
- ADB Keyboard (PCT/GS) $139

Kraft
- KC3 Joystick $24.95

Vitesse
- Quickie Scanner (GS, IIe) $199
- Quickie w/InWords $269

STORAGE DEVICES

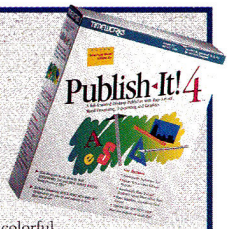
Applied Engineering

Vulcan Hard Drives include controller card and come pre-formatted with the latest system (specify machine).
- Vulcan Gold 40MB (Up to 9 times faster) $569
- Vulcan Gold 100MB (Up to 9 times faster) $949
- Gold-cache upgrade $49

AE Disk Drives
- *New!* 3.5" 1.6MB (GS) $237
- 3.5" 800K (GS, IIe, IIc+) $189
- 3.5" Controller Card (IIe, II+) $65
- 5.25" Disk Drive (all Apple II's) $134
- 5.25" Controller Card (IIe, II+) $55

TIMEWORKS

Publish It! 4



Voted "Best Desktop Publishing Program of the Decade" by Classroom Learning. Publish It! 4 requires no previous DTP experience to produce top-quality, professional-looking, colorful documents. Publish It! 4 supports laser printers and most popular dot matrix printers.

Special $79.95

Apple
- High Speed SCSI (GS, IIe) $109

SPECIAL! Quantum Super Performance 100MB, 9ms, SCSI HD with Apple High-Speed SCSI card.. Only....$679

(The same mechanism Apple uses at unbelievable price!)

ACCESSORIES

Mouse Pads $7.95

Ribbons
- Imagewriter I/II (black) $3.50

Seiko DataGraph 2001

A complete hardware/software system that puts a scheduling /message center right on your wrist! Store appointments, birth-dates, and important messages up to 23 months. Package includes Seiko 2001 Stainless Steel watch.

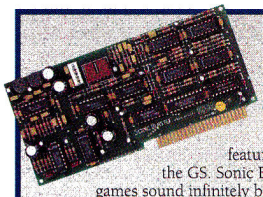
Compatible with Apple II+,IIe and IIc.

Special $39.00

Ribbons *(continued)*
- Value Pack (5 ribbons) $14.50
- Value Pack (3 ribbons) $16.50

Blank Disks
- 3.5" DS/DD (pkg. of 10) $9.95
- 3.5" DS/DD (pkg. of 50) $39.95
- 5.25" (pkg. of 10) $6.00

BLOWOUT!



Sonic Blaster

Bring your software to life with Sonic Blaster, the best full-featured stereo digitizer for the GS. Sonic Blaster makes your GS games sound infinitely better and also lets you record and edit your own sounds. Record sounds from TV, CDs or microphone, then amplify, play back, create echoes, fade-in, fade-out, cut, copy and paste. Sonic Blaster does it all!

Special $59.95

Power
- QVS Surge/Modem protector. Don't get ZAPPED!! $34.95
- TrippLite Omnipower 450 UPS. 34 min. for backup $359

EDUCATION

(Teacher's editions, lab packs and network versions available on many titles.) Please call!

Britannica
- Algebra 1st or 2nd Semester $32.50

Broderbund
- Bannermania $24.50
- Carmen Sandiego GS (World, Europe, USA & Time) $29.50
- Katies Farm, McGee, or Fun Fair $24.95

Davidson & Associates
- Alge or Math Blaster Plus $29.95

Learning Company
- Writing and Publishing Cntr $36.95

MECC
- Oregon Trail $24.50
- Fraction, Word or Number Munchers $23.50
- Grade Manager $39.50

PC Globe
- GeoQuiz GS or Geo Puzzle IIe/GS $29.95

Software Toolworks
- Mavis Beacon Typing GS $32.50

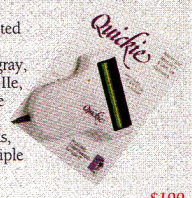
Weekly Reader
- *New!* Talking Alphabet, Shapes or Opposites $29.50

ENTERTAINMENT
- Battle Chess GS or Xenocide $31.95
- *New!* Dragon Wars GS $34.95
- *New!* Hover Blade GS $32.50
- Space Ace GS $36.95
- Test Drive II, The Duel GS $29.50
- Tetris $24.95
- Transylvania III GS $14.95
- 2088: The Cryllian Mission 1 or 2 ..... $35.95

COMMUNICATIONS

Applied Engineering
- ReadyLink $59.50

Quickie Scanner by Vitesse



The fast, smooth, uncomplicated hand-held scanner that made InWords possible. Scan true gray, B&W, or text into your IIGS, IIe, or Laser 128. Features include 320/640 mode, landscape & portrait scan, cut/paste, fat bits, resize, rotate, flip, NDA, multiple windows and much more!

Quickie Scanner $199
Quickie Scanner with InWords $269

(Includes FREE Copy II+)

GRAPHICS

Broderbund
- *New!* Printshop $29.95

Beagle Bros.
- Platinum Paint $58.95

PRODUCTIVITY

Beagle Bros.
- *Best prices & best selection on all Beagle Bros. products!* ..... *CALL!*

Claris
- Appleworks 3.0 ..... $169.00
- Appleworks GS $199.00

Other Titles
- Bank Street Writer Plus $49.50
- Word Perfect IIe or GS $109.95

UTILITIES

Applied Engineering Upgrades
- AppleWorks 3.0 Expander $15.00
- *New!* Vulcan Gold-cache Upgrade $49.00
- *New!* PC Transporter "v2.04" $15.00

Central Point Software
- Copy II+ "v9.1" $27.50

Glen Bredon
- Prosel 16 v8.7 ..... $74.95

Special! -- Purchase $50 or more of software and receive Copy II+ v8.4 for FREE! A $11.95 Value!

Three Reasons to Buy Preferred

1. *30-Day Money Back Guarantee* on hardware returned in new condition. Sorry, no refunds on printers, monitors, CPUs or software.
2. *In-Stock Same Day Shipping* Items ordered before 6:00pm CST weekdays ship the same day. UPS and Federal Express Next Day Service available.
3. *We Carry Thousands of Name Brand Items.* Whatever your needs, we carry a full line of name brand systems, hardware and software.

To FAX Your Order, Call 1-214-247-8151

Tech Support/Customer Service Call 1-214-484-5464

Preferred Computing

©1991 Preferred Computing. Visa, MasterCard and COD orders accepted. Order by phone, mail or FAX. Institutional and Government Purchase Orders welcome. Special and and Sale items may be limited in quantity. Prices and specifications are subject to change without notice. Please verify product compatibility before ordering. Texas residents please add 7.25% sales tax.

SUPERCONVERT 3.01

Jason Harper's SHRConvert has been reincarnated — and now offers more features than you could imagine.

If you're serious about your GS and your graphics, you need SuperConvert, a graphics-conversion, -enhancement, and -printing program from Seven Hills Software. This isn't just another Apple II graphics translator. SuperConvert lets your GS show off 320- and 640-mode graphics created originally on a Macintosh, Amiga, Atari ST, IBM PC, or Commodore 64. In short, if it's a picture, you can see it without ever leaving your GS. SuperConvert 3.01 handles in all some three-dozen different graphics-file formats, including nine GS-compatible formats: Paintworks Plus ($C0,0), PackBytes ($C0,1), Apple Preferred ($C0,2), uncompressed screen ($C1), Finder icon, desktop background-image INIT, graphics interchange format (GIF), and tagged-image file format (TIFF). According to Seven Hills Software's Earl Childers, the latest version of SuperConvert, which should be available this month, also supports New Print Shop graphics as well as ThunderScan "raw image" files.

★ ★ ★ ★ ★

Seven Hills Software
2310 Oxford Road
Tallahassee, FL
32304-3930
(904) 575-0566
(904) 575-2015
(fax)
SevenHills
(America Online, AppleLink, GEnie)
72437,3165
(CompuServe)

- graphics-exchange software
- 1-megabyte Apple IIgs
- $39.95

Of course, first you must acquire some graphics files. Check out public-domain libraries, user groups, on-line services, and bulletin-board systems (BBSes) for graphics created on an Apple II, Amiga, Atari ST, or IBM PC. Downloading files from America Online or CompuServe, say, to a ProDOS or GS/OS data disk is one of the more direct methods of obtaining graphics. If you acquire disks that were formatted on another computer, you'll have to transfer the graphics files to a ProDOS disk.

That's not to say that SuperConvert can work miracles. By the company's own admission, the program doesn't support all graphics formats. IBM PC images can be particularly gnatty. But graphics created originally with PC Paintbrush and DeluxePaint, including a full-color illustration featuring Mickey Mouse, looked great whether displayed on the SuperConvert screen or imported into Platinum Paint.

Converting graphics is easier than you'd think. In fact, it's pretty much automatic, thanks in large part to SuperConvert's adherence to Apple's Human Interface standards. The program features pull-down menus, full mouse support, and a *WYSIWYG* (what you see is what you get) display. Scroll through the *Load Formats* window to select the format you want to convert. Then scroll through the *Save Formats* window to choose the GS format you'd like to save. Incompatible files are dimmed (gray) in a data-disk directory, and if the program can't load a given file type, a dialog box pops up to let you know.

Photography • Larry Dunn

Change your mind about the type of save format you want? Pull down the *File* menu and select *Reconvert Last File*. If you've got a bunch of pictures you need to shift around, there's even a batch-conversion option.

After the program has translated your file, SuperConvert provides a full-screen display of the graphic. Clicking on the picture returns you to SuperConvert's work screen, where the artwork appears in a small, scrollable window in the lower right-hand corner. You can preview the full-screen display, a 50-percent reduction, or a 4X magnification of the image, and, if you use Apple's Video Overlay Card and a second monitor, you can view graphics continuously during the loading-and-conversion process.

After you've converted your images, you can use them in desktop publications, artistic endeavors, or crafts projects, or you can send 320-mode graphics to a service bureau that makes color slides. "Appendix A" in the SuperConvert manual provides not only step-by-step details, but also the name of a slide-making service experienced in handling Apple IIGS disks.

SuperConvert treats so-called "true color" images — those with higher resolution or more color than GS graphics — in a special way. It analyzes image statistics, calculates a color palette, generates a translation table, and produces the remapped picture.

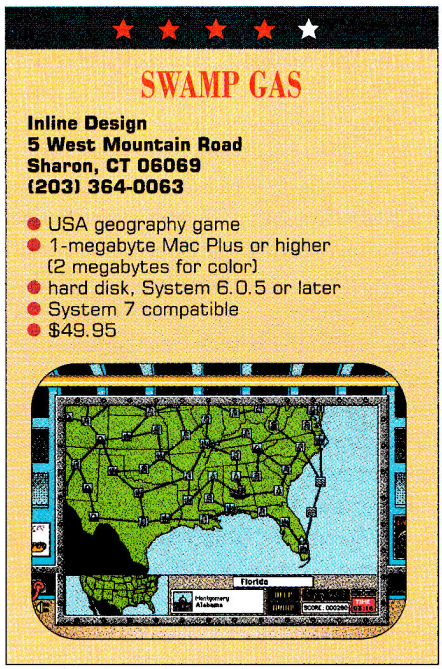
I was particularly impressed by SuperConvert's ability to remap images. I converted a clown's portrait from Atari ST Spectrum 512 format to Apple Preferred. When I imported the image into Platinum Paint, the results were outstanding. But when I brought the same image into AppleWorks GS' graphics module, the colors weren't realistic. No problem: I used SuperConvert to remap the image according to suggested settings provided on the quick-reference card supplied with the program. I resaved the image, imported it into AppleWorks GS, and was astonished by the improvement.

Some of the technical jargon associated with graphics enhancement can be daunting. But SuperConvert's dual HyperCard-style and menu-item on-line help systems, together with the "Reference" chapter in the user's manual, gave me the skinny on a slew of formats. You can think of SuperConvert as just a utility, or as an education in computer graphics.

SuperConvert offers additional GS goodies, including Disk Initializer 1.1, a desk accessory that formats 5.25- and 3.5-inch disks. The *Extras* menu holds even more surprises: An *Available Font List* feature creates automatically a WYSIWYG graphics screen image or printout of the fonts installed in your *System* folder; with the *Font Key Chart* option you can choose any font, size, and style, and make a printout showing alternate characters (such as the copyright symbol) and the keys you need to press to generate them. The hex value is provided for each character, as well. Another SuperConvert "extra" is a *Print Banner* capability that lets you output two lines of text, each in a different font. It's strange that a graphics-oriented program doesn't let you add clip art to banners, though.

Seven Hills Software's commercial reincarnation of Jason Harper's original shareware product SHRConvert offers so many new features they're too numerous to mention. If you enjoy computer graphics, you'll want to add SuperConvert to your library of creativity software.

Cynthia E. Field, Ph.D.
Wakefield, RI



Are those recent sightings of saucer-shaped UFOs real? Is the Air Force correct in concluding that these objects are actually free-ranging weather balloons, aberrant atmospheric conditions, or even noxious emissions of "swamp gas"? With its entertaining, geography-skills builder Swamp Gas, Inline Design (publishers of Tesserae, a popular Macintosh strategy game) proposes another explanation: Space aliens are touring the United States.

Swamp Gas is an educational activity that plays like a game. Amusing 16-color graphics, entertaining sound effects, and cartoon-style digitized voices all combine to pique a youngster's interest.

Challengers become touring aliens and take to the friendly skies in colorful flying saucers. The object is to visit a required number of specified destinations in the United States before time runs out. Kids score points for answering geography questions and leaving extra time remaining on the clock.

One to four players (aliens) can participate at three difficulty levels. *Beginners* and *intermediates* visit states and capitals; *advanced* players also travel to cities and landmarks. When you select the *Close Encounters* option (available only at intermediate and advanced levels), the program asks additional multiple-choice questions at random for bonus points during play.

Normally, aliens navigate the country by moving between adjacent location markers, but the game also allows two "warp" moves for every five locations kids visit, so that they can save time by traveling directly to any state they choose. Whenever kids land on a particular map icon (marker), the location's name appears in a small display window at the bottom of the screen. (The software would benefit from a printed reference map showing all travel destinations. It's especially difficult to distinguish states along the northeast coast because the video map packs them together so tightly.)

The geography missions are entertaining by themselves, but Swamp Gas also includes three fast-paced video games — *Stinky Snakes*, *Nerdoids*, and *Quasar Klutzes*. Engaging characters help make these *Alien Arcade* activities addicting. Young challengers can play only one game per visit, though; to return to the Arcade, they must first complete another Swamp Gas mission.

All Swamp Gas activities (including those at the arcade) are fun, with numerous game-style challenges motivating kids to learn U.S. geography. Yet the division of the program into two distinct phases — fact drill (*Swamp Gas*) versus play (*Alien Arcade*) — may make children question the value of learning geography as an end in itself.

In one sense, Swamp Gas reinforces the artificial separation between learning and fun. The message is clear: "Eat your

supper or you won't get dessert." Each *Alien Arcade* game would be just as enjoyable if activities centered around zapping states, capitals, major cities, or landmarks instead of snakes, nerds, or klutzes.

We shouldn't punish kids for taking time to think (using timers) or for being slow learners (denying them the reward of visiting the *Alien Arcade* until they complete a mission). Educational software meets with greater success when it creates a learning environment that turns work into fun. Swamp Gas would have been a much better educational product if it had integrated geography with *Alien Arcade* activities. It scores high marks as home entertainment, though, because it does provide more than simple arcade amusement.

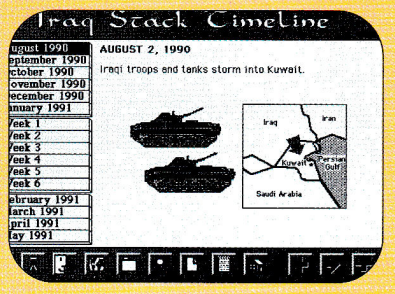
Carol S. Holzberg, Ph.D.
Shutesbury, MA

★ ★ ★ ★ ★

IRAQ STACK

Techware Corporation
P.O. Box 151085
Altamonte Springs, FL 32715-1085
(800) 347-3224

- Middle East crisis educational program
- Apple II and Macintosh versions
- 128K Apple IIe, IIc, IIc Plus, IIGS, Laser series
- 1-megabyte Macintosh, HyperCard, 800K drive
- $59
- lab packs/network versions
  10 computers $79
  25 computers $149
  50 computers $249



Tragic events do strange things to your memory, and what's more tragic than war? Most of us will always remember where we were the night the U.S. attacked Iraq. Unfortunately, more of us will remember asking, "Where's Iraq?" or "Which Hussein?"

Almost as quickly as we finished the war, Techware finished Iraq Stack. Although we needed a quick lesson on that part of the world, the company should have taken more time. It won't win any medals for this one.

In a HyperCard-style interface, Iraq Stack features text and graphics on the Persian Gulf War and the events surrounding it. The package also contains a 3-by-4-foot Hammond wall map that shows political boundaries, place names, major oil fields, pipeline routes, and principal oil-tanker routes. Class activities are included. I reviewed the program on an Apple IIGS using 3.5-inch disks. The software is also available on a set of eight 5.25-inch disks.

MIA: CONTENT

Overall, the poor quality of this program is disturbing — it must have been assembled hastily. It's helpful to jump from topic to topic by clicking the mouse on highlighted words, but this is standard hypermedia fare. The graphics images are all black-and-white — fine for digitized portraits of Bush and Hussein, but a dash of color would have doubled the usefulness of the maps. Text is shallow, grammatically flawed, and at times downright inaccurate. Military equipment is often misnamed: The UH-60 helicopter is called the "Blackhawk," not the "Black Hawk." Anyone with access to a newspaper could have done a more complete job.

I'm particularly disturbed by the stack's loaded phrases. One section is titled *Destruction of the Environment*, although it actually discusses *damage* to *environments*. It also includes the term *terribly polluted*. The results of pollution may indeed be terrible, but the important question is "*How* polluted was the desert around the burning wells?" If children are to learn to solve problems objectively, we must avoid judgmental words such as "terribly" and attempt to quantify the level of damage.

This same approach to the issues surrounding the Gulf War reverberates throughout the package. Iraq's side of the conflict is almost completely ignored, as is the delicate balance of tensions that exists among the nations of the Middle East. Instead the program emphasizes numbers of prisoners, dates of actions, distances, and recitations of names and places.

Other information is misleading, too. For example, the program states that countries "with hostile and dangerous governments are not allowed membership" in the United Nations. Although the U.N. charter does state that membership is open to all peace-loving states, its current membership does include many nations that aren't so peace loving. The stack doesn't mention that membership has a lot to do with the politics of the General Assembly. Iraq Stack provides a relatively biased look at the world in general and the Gulf War in particular.

The program comes across like a shallow newspaper article written by a junior reporter who failed to verify most of the facts. Despite the software's impressive ability to click from one subject to another, information is superficial and lacks detail. Want to know more about the war in the Gulf? Read the newspapers and try a history book or two. You owe it to yourself to check out as much information as possible, from as many sources as possible.

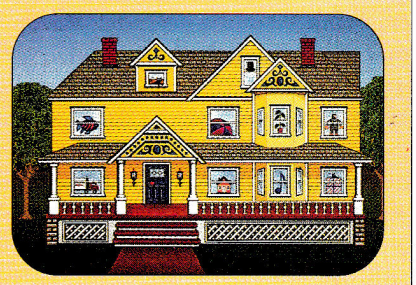
Jerry D. Greer
Bedford, IN

★ ★ ★ ★ ★

READING MAZE

Great Wave Software
5353 Scotts Valley Drive
Scotts Valley, CA 95066
(408) 438-1990

- early-reading software
- 1-megabyte Macintosh Plus, SE, Classic, SE/30, LC, Mac II, IIcx, IIsi, IIci, IIfx, Portable
- supports System 7 features (balloon help, high-level events for network collaboration)
- no copy protection
- $49.95 black-and-white, $69.95 color



With abject apologies to the Bard: "To enjoy oneself or to learn: That is the question." Indeed, that *is* the question we ask daily of our children as they trudge off to the horrors of the three Rs. The ideal system would be one in which children could appreciate the joy of accomplishment that mastery of a subject brings. In the meantime, the challenge is to create games that entertain children while helping them learn. The

difficulty lies in providing quality education while holding kids' attention and giving parents and educators measurable feedback.

INTRODUCING A SOLUTION

Into the fray steps Great Wave Software with its new Reading Maze, a game intended to help children aged 3 to 7 learn to read by associating pictures with letters and words. The object of the game is to collect assigned household items, such as balls, clowns, cups, and dolls.

When a student picks up an item, a book appears on screen. The youngster must then solve a series of problems. Prekindergarteners might match a word to a picture, while second-graders might be required to arrrange sentence segments in the correct order or to identify as true or false a sentence describing a scene.

When the child answers three questions correctly, the program takes him or her back to the maze and continues the game until all assigned items in the house have been located and questions answered. When that happens, the student moves on to the next maze, which is more challenging.

Reading Maze includes 26 increasingly difficult maze types, more than 300 vocabulary words, and up to 70 problem levels in each of eight curricula (prekindergarten through second-grade level II). There's also a curriculum for special education, and space to create your own word and problem sets.

In all grades, the game gets progressively more difficult. Eventually, it presents fairly complex mazes, a number of items to retrieve (by name, not by picture), obstacles such as an elf who moves the student randomly to another location in the maze, and rooms you can't open without a key.

Other aids include a flashlight that lets the student take shortcuts through the maze via secret passageways, and a magnifying glass that offers hints about the location of each item. To use these aids, the student must find them throughout the house and answer problem questions.

Reading Maze lets teachers and parents see how well students are doing at each level through a statistics window that tracks progress and lists proficiency at each level. Each of the previous eight levels is listed, with percentages of correct answers displayed as graphics. Progress at the current level is also listed, along with nouns a student may need to work on.

The program also offers a number of advanced features to let parents and teachers customize the game to each student's level. Not only can parents or teachers select a predefined level for a student, they can also create their own curricula. In addition, parents and teachers can design their own mazes and change problem levels. Using an optional microphone and Farallon's MacRecorder system, parents and teachers can record words or sounds for each of the 214 noun objects the software uses. If you have a Macintosh IIsi or LC, the process is even easier, as those computers have built-in sound capabilities.

Reading Maze is one of the first Macintosh programs to take advantage of System 7, with support for linking and balloon-help features. Linking lets students hook into classmates' computers and solve the maze together. As each student collects an item, both get credit for it. (Each student solves problems on his or her own, though.) Balloon help provides information about the game at many locations on screen in "balloons" similar to those in cartoons. This feature can be turned on or off.

NOT WITHOUT FLAWS

Although Reading Maze is a fine program, it's not flawless. Pictures are too small, and some are difficult to identify. Some remain a mystery even to adults, leaving you wondering how young children could decipher them. In addition, although rooms are colorful, there may be too much detail and too many items for little ones, who may wonder why the wallpaper and art have nothing to do with the game. In addition, the software's balloon help is nice, but seems a bit silly in an elementary reading program.

Overall, however, Reading Maze is an entertaining, attention-grabbing product that just might trick your kids into learning. It's worth a try.

Jordan Gold
Palo Alto, CA

★ ★ ★ ½ ★

TALKING TOOLS

Byte Works, Inc.
4700 Irving Blvd. NW, Suite 207
Albuquerque, NM 87114
(505) 898-8183

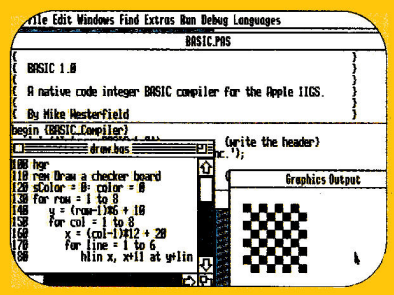
- programming tool for speech synthesis
- 1-megabyte Apple IIgs (1.25 megabytes recommended)
- one 3.5-inch disk drive (two recommended)
- no copy protection
- $60

★ ★ ★ ★ ★

ORCA INTEGER BASIC

Byte Works, Inc.
4700 Irving Blvd. NW, Suite 207
Albuquerque, NM 87114
(505) 898-8183

- Integer BASIC compiler and learning aid
- 1.25-megabyte Apple IIgs
- one 3.5-inch disk drive
- ORCA or APW development environment (ORCA Pascal recommended)
- no copy protection
- $50



With its latest two products, Talking Tools and Orca Integer BASIC, Byte Works looks to the Apple II's future and past. Talking Tools provides GS programmers with a new capability: software-controlled speech synthesis. (Until now, speech synthesis on the Apple II had only been available through add-on hardware.) Integer BASIC lets you revisit classics from the Apple II's past, and it's also an excellent teaching tool for learning about computer-language compilers.

First let's look to the future. There are

Continued on page 62

Is your Macintosh quiet, withdrawn, a little drab, perhaps? With a CDEV here and an INIT there, you can customize your computer to make it not only productive, but also fun to be around.

WAY COOL

By OWEN W. LINZMAYER

Admit it. One of the big reasons you bought a Macintosh was because it's an "insanely great" computer that just so happens to be pretty cool, too. Forget about personal productivity, educational software, desktop publishing, financial management, and all the other boring applications that are widely available for every computer platform. Aside from its celebrated ease of use, the thing that really sets the Mac apart from the competition is that it's a heck of a lot of fun to use, what with its artistic icons, floating windows, animated cursors, vivid color, and enticing sound effects.

Right out of the box, the Mac is a box full o' fun. But what you may not know is that it's very easy to customize the Mac's operation to reflect your unique style and express your individuality. We've combed through the best user-group libraries, on-line databases, and commercial offerings in search of neat little tips and programs that fit one strict requirement: They have absolutely no redeeming value other than the fun they bestow on your Mac.

THE RESOURCEFUL MAC

You'll soon notice that a lot of the programs mentioned here require **ResEdit**. Basically, ResEdit is a utility from Apple Computer that lets you change various aspects of an application's *resource fork*, the area that defines the look and feel of icons, menus, windows, and so on.

ResEdit is free, but it's not part of the standard system software distributed by Apple, and for good reason. Since it's a rather complex utility that can render a program useless at the stroke of a key, you don't *want* to use ResEdit easily. The best way to get ResEdit is bundled with one of two books from Addison-Wesley: ***ResEdit Complete*** or ***ResEdit Reference***.

WARM WELCOME

Did you know that you can replace the standard "Welcome to Macintosh" screen that appears whenever you turn on your computer? All you need is a graphics application — such as MacPaint 2.0 or PixelPaint — that can save images in StartUpScreen format. Name the file *StartUpScreen* and place it in your *System* folder, then restart to see your custom image. This works with color or black-and-white images.

The only problem is that you're likely to become tired of looking at the same image each time you restart. Luckily, there's **Screen INIT** to the rescue. This little application runs each time you restart your Mac, swapping StartUpScreens in and out of a special folder you create in the *System* folder. Screen INIT operation is a little clunky, but then again, author Michael Dolan has placed it in the public domain, so it's free.

Now that's nothing compared to what you can do with the freeware program **Lights, Camera, Action!** This Control Panel device written by Robert S. Wah plays standard PICS animation files during startup, complete with soundtrack if you like. So in addition to watching a parade of INIT (startup document, also called *extension* under System 7) icons marching along the bottom of your screen during startup, you can sit back and view a minimovie.

SPRUCING UP YOUR DESKTOP

If you can watch movies during startup, why settle for boring geometric patterns on the Finder's desktop? Use the

MAC

Illustration ⌖ Ned Shaw

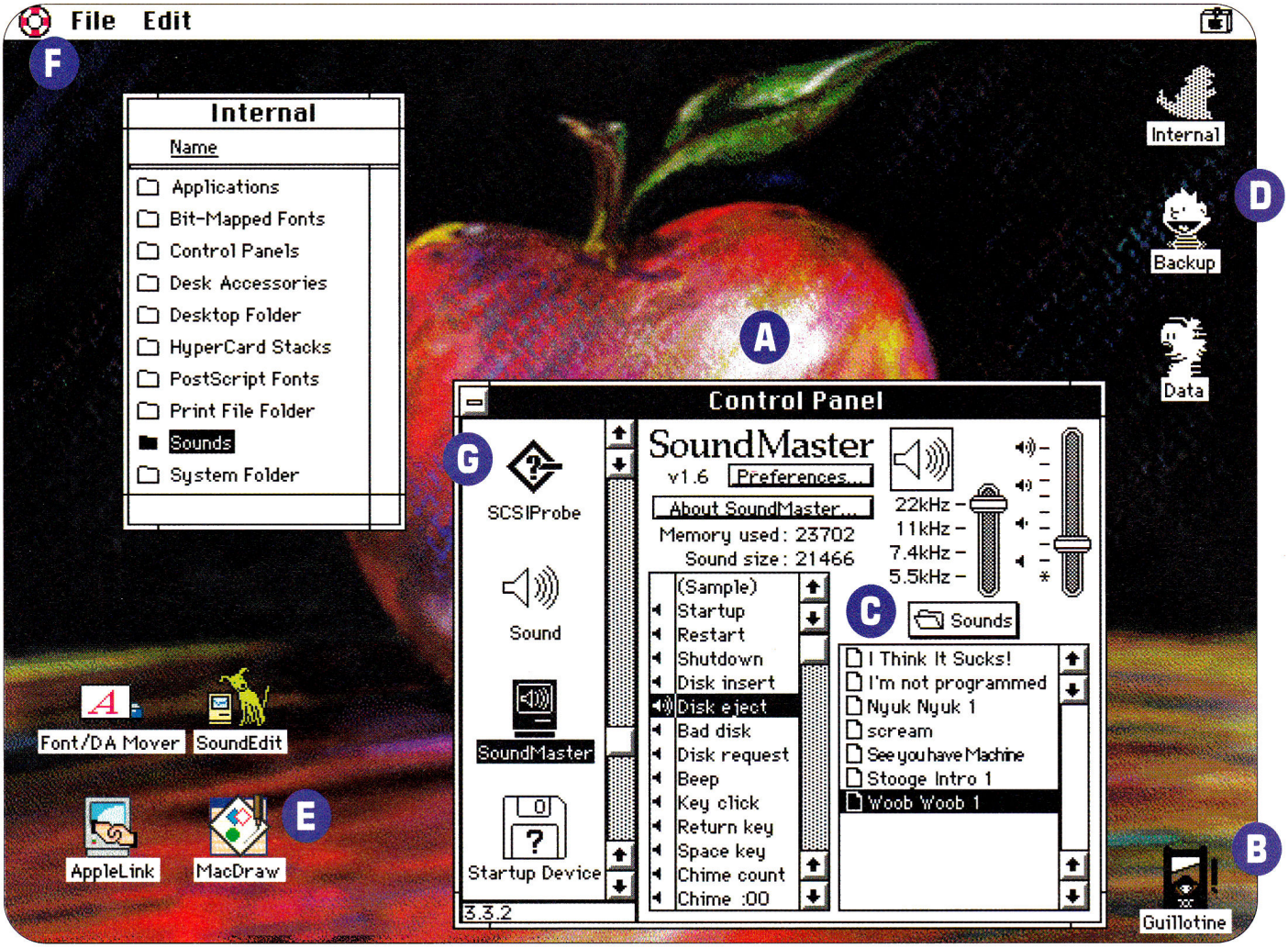


Figure 1. What good is "personal productivity" if you can't have fun doing it? Express yourself: Control-panel devices and startup documents dress up your Mac's desktop and show off your special style.

A. The DeskPicture module in Now Software's Now Utilities puts the PICT image of your choice on the desktop.
B. Working in combination with Apple's ResEdit program, the freeware utility Guillotine replaces your Finder's Trash icon — and even lets out a blood-curdling scream if you have a sound-effects product installed.
C. Wake up — SoundMaster lets you match a range of Finder actions with various sound effects.
D. The freeware INIT Façade comes with a file of replacement icons, including Godzilla, Calvin, and Hobbes. Use ResEdit to assign your own disk-drive names to them.
E. SunDesk comes with dozens of color icons for common applications and various Finder elements.
F. Fruits of Passion replaces the Apple logo with something more befitting your personality.
G. ClickChange lets you modify the appearance of windows and dialog boxes — here, to resemble Microsoft's Windows 3.0 style. Other modules offer customization options for cursors, buttons, colors, and sound effects.

DeskPicture module in **Now Utilities** to replace them with color or black-and-white pictures of your choosing (**Figure 1**). You can create PICT images from scratch with a graphics application, scan them from paper, or take them from clip-art collections.

Other modules in the Now Utilities package are a little more productivity-oriented, and include *Super Boomerang*, *Startup Manager*, *Screen Locker*, and *WYSIWYG Menus*. Since they're actually good for something, we won't cover them here.

TRASH IT

The Grouch is a free startup document you place in your *System* folder. Thereafter, every time you choose *Empty Trash* from the Finder's *Special* menu, Oscar the Grouch of *Sesame Street* fame pops out of the *Trash* icon and sings a little song about his love of garbage. The Grouch was animated by Ken Hornak and written by Eric Shapiro, who recommends that users watch out because "little kids tend to throw away everything they can get their hands on in order to see Oscar pop out of the *Trash*."

While kids love Oscar, adults with a mean streak lose their heads over **Guillotine**, a freeware offering by Michael J. Fisher. Use ResEdit to replace the Finder's *Trash* icon with that of a working guillotine (**Figure 1**). The icon, name, and menu items related to *Trash* are all updated with appropriate guillotine metaphors. A blood-curdling digitized scream is also included for those using utilities — such as *ClickChange*, *Finder Sounds*, or *SoundMaster* — that trigger sound effects upon certain Finder operations.

SOUND EFFECTS

One undocumented feature of System 6.0.4 is the Finder's ability to play sounds corresponding to various events, such as opening windows, deleting files, and ejecting disks. All you need to take advantage of this feature is a shareware program such as **SoundMaster** from Bruce Tomlin (**Figure 1**). Just drop this baby into your

System folder and reboot for a sonic Finder. The program comes with a number of built-in sound effects tied to various Finder actions, and you can import your own.

GET THE PICTURE

Tired of boring hard-disk-drive icons? **Façade** is a startup document that lets System 6 users assign custom Finder icons to disk drives. Written by Greg Marriott, Façade comes with a file containing black-and-white icons of *Calvin*, *Hobbes*, *Godzilla*, *Untitled*, and *Moof* (**Figure 1**). Use Apple's ResEdit to change the names so that they're assigned to your drives. You can also modify existing icons or create your own.

It's much easier to change icons — for both hard drives and files — under System 7. Simply click on the file you want and choose *Get Info* from the *File* menu. In the *Info* dialog box, click on the icon so that a box appears around it. Then paste in a new PICT image from the clipboard and click on the close box in the upper left-hand corner of the *Info* dialog box. For those of us without an artistic bone in our bodies, Douglas C. Peterson of **Anabolic Systems** has assembled a collection of seven color icons you can use *gratis*.

SunDesk is a startup document that displays Finder icons in 8-bit color (up to 256 different hues) under System 6. SunDesk comes with dozens of color icons for common applications (**Figure 1**) and other Finder elements, including the *System* folder and the *Trash*. Using ResEdit, it's easy to add more color icons of your own creation. SunDesk is copyrighted, but it's free. Additional icons are available free through user groups and on-line services, or you can purchase them from **Immedium Design**.

THE APPLE LOGO

Are you the kind of person who doesn't wear clothing emblazoned with company logos because you refuse to be a walking billboard? Then why do you let that silly Apple logo appear in the upper left-hand corner of the Mac's desktop? Get yourself a copy of **Fruits of Passion** and you can replace Apple's logo with a color one of your choosing, including a cherry, a bitten apple, a pear, a lifesaver (**Figure 1**), a floppy disk, and so on. And with a little help from ResEdit, you can add your own creations to Fruits of Passion.

Or ditch the Apple icon for one that *moves*. Jan Bruyndonckx of Belgium has incorporated several animated black-and-white icons into a single INIT called **SuperApple**. Each time you restart, you get a new animation in the upper left-hand corner of your screen. To become a registered owner, just send Jan a postcard of your hometown.

HAVING IT ALL

If there's one commercial package guaranteed to make you the envy of all your friends, colleagues, or schoolmates, it's **ClickChange**, a Control Panel device containing six modules that let you customize every aspect of the Mac's look and feel, including all the standard interface elements — cursors, windows, buttons, colors, and sounds.

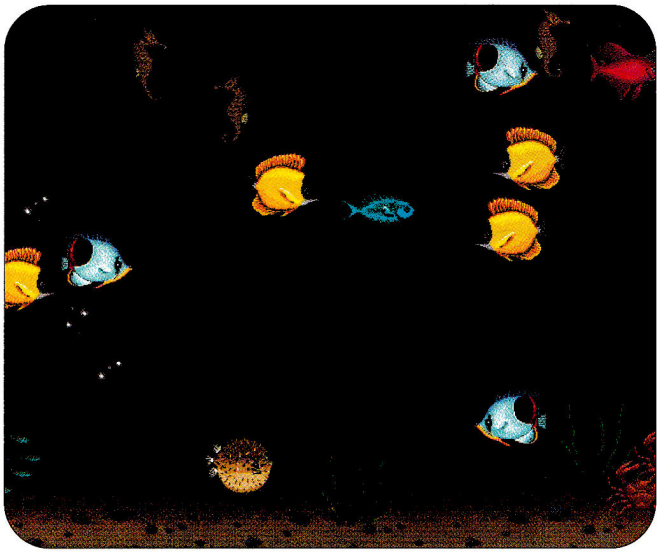


Figure 2. After Dark's Fish module turns your dormant Macintosh into an aquarium.

ClickChange comes with more than 80 animated cursors of all types, including jumping dogs, rotating cubes, and bouncing balls. And with the powerful built-in editor, you can modify existing cursors or design your own.

Like SoundMaster, ClickChange lets you link particular sound effects to Mac events. For instance, the Mac can let out a belch whenever you eject a disk. Dubl-Click Software provides more than 30 fun sounds, and you can get others from on-line services or user-group libraries, or create your own with Farallon's MacRecorder system or the microphones that come with the Mac LC and IIsi.

Other ClickChange modules let you modify windows and dialog boxes to look the way they do on NeXT, IBM, and Sun platforms, for example (**Figure 1**). Or you can customize buttons with a variety of three-dimensional looks. Almost all modules in ClickChange have shareware or public-domain counterparts that do the same things, but Dubl-Click has taken the guesswork out of compatibility.

SCREEN SAVERS

Two of the most popular utilities around are **After Dark** from Berkeley Systems and

EXCLUSIVE COOL DISK OFFER

Most of the shareware and public-domain programs mentioned in this article are widely available in user groups' collections and on-line services' download libraries. Not everyone has access to these distribution channels, though. With the permission of the programs' authors, inCider/A+ has put together an 800K disk containing the following programs and their related files:

- **Anabolic Disk Icons**
- **Façade**
- **Flowfazer Demo**
- **Fruits of Passion**
- **The Grouch**
- **Guillotine**
- **Key Lights**
- **Lights, Camera, Action!**
- **Screen INIT**
- **SoundMaster**
- **SunDesk**
- **SuperApple**

To receive a copy of inCider/A+'s disk, send a check or money order payable to Owen Ink in the amount of $5 (U.S. funds only), to Mondo Cool Mac Disk Offer, 1830 Lawton Street, San Francisco, CA 94122-3328.

Please note that this nominal fee covers materials, shipping, and handling costs only and doesn't release you from your obligation to pay appropriate shareware fees.

— O.L.

PRODUCT INFORMATION

After Dark 2.0
Berkeley Systems
1700 Shattuck Ave.
Berkeley, CA 94709-1762
(800) 877-5535
(415) 540-5535
$49.95 list
$22 mail-order sources

ClickChange 1.04
Dubl-Click Software
9316 Deering Ave.
Chatsworth, CA
91311-5857
(818) 700-9525
$89.95 list
$40 mail-order sources

Disk Icons
Douglas C. Peterson
Anabolic Systems
freeware

Façade 1.0.1
Greg Marriott
Apple Computer, Inc.
20525 Mariani Avenue
MS 46Z
Cupertino, CA
95014-6201
freeware

Flowfazer
Utopia Grokware Inc.
300 Valley St.
Sausalito, CA 94965
(415) 331-0714
$49.95 list
$40 mail-order sources

Fruits of Passion 2.4
Andres Christophe
Chrisoft
2, Rue de Fréland
67100 Strasbourg
France
freeware

The Grouch 2.0b8
Eric Shapiro
Rock Ridge Enterprises
freeware

Guillotine
Michael J. Fisher
freeware

Key Lights 1.0d8
Rick Kaseguma
474 Memorial Drive
Cambridge, MA 02139
freeware

Lights, Camera, Action! 1.0
Robert S. Mah
1530 Spruce St.
Apt. 604
Philadelphia, PA 19102
freeware

Now Utilities 2.03
Now Software
520 S.W. Harrison St.
Suite 435
Portland, OR
97201-5258
(800) 237-3611
(503) 274-2800
$129 list
$75 mail-order sources

Pyro!
Fifth Generation Systems
10049 North Reiger Road
Baton Rouge, LA
70809-4559
(800) 873-4384
(504) 291-7221
$39.95 list
$25 mail-order sources

ResEdit
Apple Computer
20525 Mariani Ave.
Cupertino, CA 95014
(408) 252-2775
freeware

ResEdit Complete,
$29.95 list
ResEdit Reference,
$14.95 list
Addison-Wesley Publishing
Route 128
Reading, MA 01867-3999
(617) 944-3700

Screen INIT
Michael Dolan
freeware

SoundMaster
Bruce Tomlin
$15 shareware fee

SunDesk
Frédéric Miserey
nOne Corp.
13, Boulevard Pasteur
51100 Reims
France
freeware

SunDesk Icons
Tom Poston
Immedium Design
2114 Lockhart Drive
Charlotte, NC
28203-6040
various prices

SuperApple
Jan Bruyndonckx
Salvialei, 23
B-2540 Hove
Belgium
freeware

TurboMouse Trackballs
Kensington Microware
2855 Campus Drive
San Mateo, CA 94403
(800) 535-4242
(415) 572-2700
$12.95 list
$10 mail-order sources

Pyro! from Fifth Generation Systems. Both purport to be useful "screen savers" that display various animations in an effort to prevent static images from burning into the phosphors on your monitor.

That explanation might get your purchase order past your manager's desk, but the real reason these "utilities" sell is because they're cool. After a user-specified period of inactivity, the screen saver kicks into action, displaying fireworks, flying toasters, personalized messages, kaleidoscopes, bouncing logos, and so on until you press a key or move the mouse. Of the two packages, After Dark has more modules and gets my recommendation (**Figure 2**).

Of interest to the psychedelic crowd is **Flowfazer** from Utopia Grokware, rock-musician Todd Rundgren's software company. Somewhat similar to After Dark's *Satori* module, Flowfazer looks like a beautifully undulating lava lamp on acid. Unfortunately, it's a little pricey for a one-trick pony.

PUZZLE IT OUT

One of the most frivolous pieces of System 7 software is the **Puzzle** desk accessory, in which you try to arrange the 15 sliding tiles to form the rainbow-striped Apple logo. Since it has little value aside from acquainting novices with the concept of point-and-click, most users simply toss this desk accessory in the *Trash*. Too bad, because you can replace the Apple logo with any picture you want (even 24-bit color images). Copy a PICT image to the clipboard (select a portion of the image and press Command-C), then choose *Puzzle* from the *Apple* menu, paste the image into place (Command-V), and the picture on the clipboard is automatically scaled to fit inside the *Puzzle* (**Figure 3**). To revert back to the Apple logo, choose *Clear* from the *Edit* menu.

FLASH IT

Written by Rick Kaseguma, **Key Lights** is a public-domain Control Panel device that makes the *Num Lock*, *Caps Lock*, and *Scroll Lock* light-emitting diodes (LEDs) on an Apple Extended Keyboard flash in a back-and-forth sequence. You can set the speed and direction and turn off the sequencing without restarting. This program has absolutely no utility aside from turning your keyboard into Kitt from *Knight Rider*.

Figure 3. Apple's Puzzle desk accessory can contain a picture of anything you want under System 7.

TURBO TRACKBALLS

Kensington Microware offers replacement balls for its **TurboMouse** trackball in solid black, purple sparkle, blue pearlescent, or red pearlescent. You can even substitute a standard billiard ball, though Kensington discourages this practice because the additional weight places undue stress on the trackball's internal components.

YOU CAN'T BE TOO COOL

As you can see, it's fun and easy to customize your computer to reflect your personality — or maybe you'd rather reveal your secret persona. With the assortment of public-domain and shareware products described above, you can show off your unique brand of cool. When it comes to your Macintosh, don't listen to the advice of Huey Lewis — it's definitely *not* hip to be square. ❑

FREE-LANCE WRITER OWEN W. LINZMAYER USED TO BE A COMPUTER GEEK. NOW HE'S A COMPUTER GEEK WITH A TOTALLY RAD MAC. WRITE TO HIM AT 1830 LAWTON STREET, SAN FRANCISCO, CA 94122-3328. PLEASE ENCLOSE A SELF-ADDRESSED, STAMPED ENVELOPE IF YOU'D LIKE A PERSONAL REPLY.

YOU ASKED FOR IT.

- YOU WANTED FAS-TRACK'S TOLL-FREE TECH SUPPORT.
- YOU WANTED SCHOOL PO's WELCOME.
- YOU WANTED 30-DAY UNCONDITIONAL MONEY-BACK GUARANTEE.
- YOU WANTED FAS-TRACK'S PRICE MATCH. Call for details.
- YOU WANTED FAS-TRACK'S GIANT CATALOG. FREE.

YOU GOT IT!

FAS-TRACK DELIVERS!

Fas-Track PowerDrive—featuring Quantum SCSI Hard Drives

52 Meg External Drive	**$349.95**
105 Meg External Drive	**$479.95**
RamFAST/SCSI w/256K	$179.95
Salvation Supreme (IIgs)	$99.95
ProSel 8 (IIe)	$32.95
ProSel 16 w/Manual (IIgs)	$69.95

- Compatible with Apple IIgs, Apple IIe, and Mac. (Apple IIgs and IIe require a SCSI interface)
- Fast 19ms access time
- External case with power supply
- 2 SCSI Ports
- 30 day money back guarantee and 1 year warranty
- Preformatted for Apple IIgs (GS/OS), Apple IIe (ProDos 8), or Mac
- Includes all cables and manuals

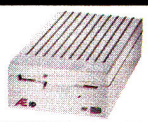
Applied Enginnering

TransWarp GS w/8k cache	$219.95
TransWarp GS w/32k cache	$294.95
TransWarp GS upgrade	$86.95
GS Ram III w/1 Meg	$159.95
GS Ram III w/2 Meg	$214.95
GS Ram Plus w/1 Meg	$199.95
GS Ram Plus w/2 Meg	$249.95
TransWarp IIe (4 mhz)	$94.95
RamWorks III w/256K	$139.95

Memory Chip Upgrades

256K x1 Drams (8 - 120ns)	$19.95
1 Meg x 1 Drams (8 - 100ns)	$54.95
1 Meg x 8 SIMMs (80 ns)	$54.95

AE 3.5" Daisy-Chain Drive

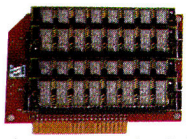


800K **$189**

1.6 Meg **$245**

IIe UDC Card **$40**

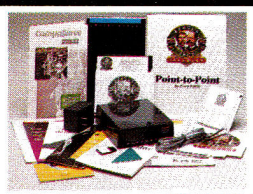
New! IIgs Super RAM



Add up to 4 meg to your Apple IIgs. 100% compatible. 5 year warranty.

IIgs Super RAM w/1 Meg	$99.95
IIgs Super RAM w/2 Meg	$139.95
IIgs Super RAM w/4 Meg	$219.95

Zoom 2400B Modem Pack



Package includes Zoom MX 2400 baud external modem, Beagle Brothers Point-to-Point Communications software, Compuserve and Genie starter Kits and more. Compatible with Apple IIe, IIc, IIgs, and Laser 128 series **$134.95**

Zip IIgs

GSX1500-7mhz, 8k cache	$149.95
GSX1600-8mhz, 16k cache	$199.95
GSX1800-9mhz, 16k cache	$229.95

Productivity Software

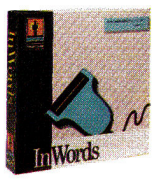
AppleWorks 3.0	$169.95
AppleWorks GS 1.1	$199.95
HyperStudio 2.1 (IIgs)	$83.95
ProTERM	$79.95
Copy II Plus 9.1	$24.95
Prosel 16 w/Manual (IIgs)	$69.95
Cross-Works	$69.95
Vitesse Salvation Series(IIgs)	$99.95

Vitesse Quickie Scanner

Quickie 400DPI Handscanner for Apple IIe & IIgs includes new 16 gray shade software **$194.95**

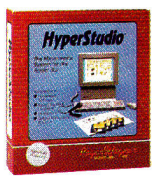
Quickie & InWords Package **$269**

InWords OCR Software



InWords OCR software allows you to scan text and use it with AppleWorks and other applications. **$79.95**

New! Hyper Studio 3.0

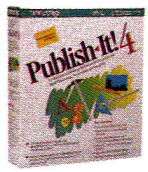


Packed with extra features and new button actions, you can do even more with greater ease in designing your own Hypermedia presentations. **$104.95**

Edu-Tainment Software

Childrens' Writing & Publishing Center	$34.95
Oregon Trail	$24.95
Word, Number Munchers	ea $24.95
Think Quick	$29.95
Mavis Beacon Typing (IIe)	$25.95
Mavis Beacon Typing (IIgs)	$31.95
Computer SAT or ACT	$29.95
Chessmster 2100(IIe or IIgs)	$31.95
Tetris (IIe and IIgs)	$24.95
GeoQuiz (IIgs only)	$29.95
GeoPuzzle (IIe or IIgs)	ea $24.95

Publish It!4



New and improved version of the number one selling Apple IIe and IIgs DTP Program **$77.95**

4 In One Art Portfoilo $79.95

Print Shop Companion IIgs

Apple IIgs **$29.95**

Print Shop IIgs **$35.95**

Other Broderbund Titles

The New Print Shop	$29.95
Banner Mania	$21.95
Where in Time or USA	$27.95
Where in the World	$25.95

Beagle Brothers Software

Platinum Paint (IIgs)	$59.95
AW 3.0 Companion Plus	$29.95
T.O. TextTools, Thesaurus	$30.95
T.O. Superfonts	$42.50
T.O. Sidespread	$30.95
T.O. SuperForms, Outliner	$42.50

Other Hardware

ComputerEyes IIgs	$194.95
Lightning Scan IIgs	$199.95
IIe 80 Column 64K Card	$19.95

Accessories

IW Black Ribbon 1-5 **$2.95** 6+ **$2.25**

IW 4-Color 1-5 **$5.95** 6+ **$4.95**

10 DS/DD 3.5" Disks	$5.50
10 High Density 3.5" Disks	$10.50
25 DS/DD 5.25" Disks	$8.25

FAS-TRACK COMPUTER PRODUCTS

CALL TOLL-FREE 1-800-421-4698

1-614-847-4050 (central Ohio)
1-614-847-4180 FAX

MON—FRI 9 AM TO 8 PM/SAT 10 AM TO 5 PM (EST)

We accept MasterCard, VISA, and Discover Card—no extra charge. School purchase orders welcome. Continental U.S., F.P.O., and A.P.O., add 4% (minimum $4.00 for each shipment). AK,HI, PR, VI, and Canada, add 5% (minimum $10). International orders, except Canada, will be shipped priority mail insured and charges will be added to your order. No C.O.D. Ohio residents add 5.75% Sales Tax. Please, no returns without prior authorization. All products have a 30 day unconditional money back guarantee. Shipping charges are not refundable. Prices and availability are subject to change without notice.

Circle 85 on Reader Service Card.

7030C HUNTLEY ROAD • COLUMBUS, OHIO 43229

WAY COOL

GS

Who wants to look at the same old screen every day or go through the same operations time after time? Catch the wave — *customize.* Install some low-cost icons and utilities and wake up your Apple IIGS.

Variety is the spice of life, they tell us — and nobody needs it more than the person who sits in front of a computer screen a good part of the day. Even a small change — a livelier interface, for instance — can make a difference in how productive you feel. What can you do to get things rolling? If you're an Apple IIGS owner, you're in luck. One of the prime benefits of the GS' graphics look and feel is that you can customize it to fit your style of operation — anything from the Finder's operation to program selection. And thanks to a wide variety of shareware and public-domain utilities, designing your desktop doesn't even have to cost much.

Installation is easy, too, and pretty intuitive. With most customization programs, all you need to do is drag a file or two to the appropriate directory or subdirectory on your GS System Disk, the startup disk. To add custom icons, for instance, just copy them to the *Icons* folder. Drag Control Panel devices to the *CDEV* folder, permanent initialization files (INITs) to the *System.Setup* folder, and desk accessories (DAs) to the *Desk.Accs* folder.

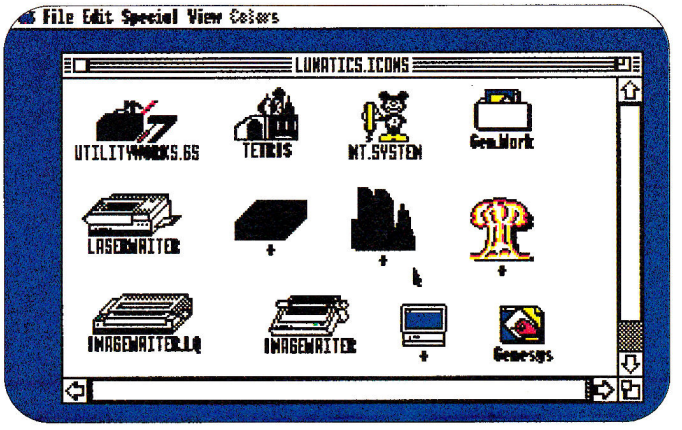
Sound complicated? It isn't really, thanks to the GS' point-and-click interface. A couple of quick definitions should help you wade through the alphabet soup as you customize your system. *INITs* load automatically whenever you reboot; *CDEVs* also mesh directly with your system software, but include user-adjustable parameters you can access via the Control Panel under the *Apple* menu; *DAs* are miniprograms you can access within other programs. Once you copy a selection of DAs to the *Desk.Accs* folder and reboot your computer, they'll always be there, ready to use, whether you're working with the Finder or AppleWorks GS' page-layout module. Desk accessories come in two varieties: classic (CDAs) and new (NDAs). You call up CDAs within another program by pressing the open-apple, control, and escape keys in combination. CDAs are accessible from virtually any program that runs on the GS, even ProDOS 8 applications. You call up NDAs via the Apple pull-down menu displayed in most (but not all) GS/OS applications. You can't access NDAs from a ProDOS 8 program.

Some of the enhancements we'll look at here are functional — they'll boost your "personal productivity" — but some are just plain fun. Either way, keep these basic requirements in mind before you choose your selection of add-ons:

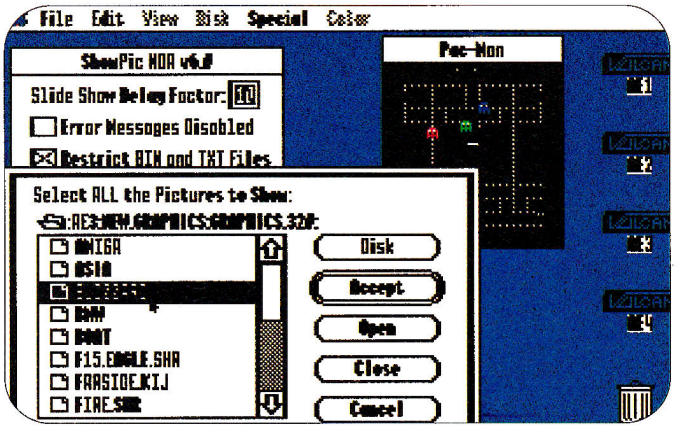
- Most customization programs require that you copy files to your GS System Disk, the one you use when you first turn on your computer. The size of the GS System Disk, though, has been growing steadily with each new revision of the operating system. Booting your machine from a 3.5-inch floppy means that there's very little free disk space available, and therefore only a few custom options are possible. If you use a hard-disk drive, however, you should have more than enough free disk space to store all the options you want to choose from.
- Many customization programs also require expanded RAM (random-access memory). The more memory your computer has, the better these options will work for you. In other words, if you have a standard 1-megabyte system, you'll be able to add only a few files; if you have 1.5 megabytes or more, you shouldn't have any problem changing most aspects of your desktop environment.
- At press time, GS/OS 5.0.4 was still the current version of the GS System Disk. Apple is expected to release System 6.0 soon, though, and that may make some customization programs obsolete; others may simply not work at all.

By JOE KOHN * CONTRIBUTING EDITOR

Illustration * Ned Shaw



A sampling of icons from Bruce "Lunatic" Mendez. Note animated pop-up folder (Gem.Work) and NYC "before and after" trash.



ShowPic displays a wide variety of super-hi-res graphics and can present them in slide-show fashion. Note Pac-Man NDA in background.

Let's hope utility programmers release new versions of their programs when System 6 arrives.

LOAD UP

If you want to get a kick out of your computer from the moment you turn it on, try Guy T. Rice's freeware utilities **StartPic** and **Start Sound**. These nifty little INITs display a full-screen graphic during the boot-up process, and play prerecorded digitized sounds while GS/OS is loading, respectively. More than a few GSes proclaim the words spoken by the most famous computer of all time — the HAL 9000 from the movie *2010* — each time they're turned on: "I'm completely operational and all my circuits are working perfectly." StartPic lets you display any uncompressed super-hi-res GS graphic during that same load process. If you have enough disk space to store multiple images and digitized sounds, these startup utilities can display and play a different one each time you reboot.

Another special-effect sound utility is **SoundOff!**, a $10 shareware INIT/CDEV combination by Daniel M. Zimmerman and Jay Fennelly. It lets you play any digitized sound at boot time, and change the GS system beep to any digitized sound of your choosing. Because your system generally beeps at you in times of trouble, such as a computer crash, that beep is a source of high anxiety. With SoundOff!, you can change it to a laugh, or to any other digitized sound file that will make you smile instead of curse.

PICTURE THIS

The Finder's icons — those small representations you click on to launch programs — are especially fertile ground for creative types. Hundreds of predrawn custom icons of all varieties, shapes, and colors are available in the public domain. Some are artistic, some comical — based on popular cartoon characters or sci-fi heroes. One popular trash-can alternative displays a toilet bowl that opens and closes as you drag files into it.

Some of the best icons are the creations of Bruce "**Lunatic**" Mendez. With inspired wackiness, he's produced a set of trash-can icons that look like the skyline of New York City. When you drag files into the trash, the icon quickly changes to the skyline of New York after a 50-megaton bomb has been dropped on it. He's also created some enjoyable folder icons; when you click on a Lunatic folder, it appears to pop open.

If you've got an artistic bent, you can create your own icons from scratch with an icon editor. The most popular ones are two $15 shareware programs: Paul Elseth's **Icon Ed** and Dave Lyon's **DIcED**. Both contain graphics tools that let you custom-design icons, modify them, colorize them, and specify their file attributes — the pathname information that instructs the Finder on where to find the program you want to run. Click on a paint icon, for instance, to run your favorite graphics program automatically, or click on an AppleWorks word-processor icon to run that program.

You may also want to take a look at **Instant Icon**, a freeware utility from Mike Nuzzi of Triad Venture. Instant Icon lets you clip a portion of any super-hi-res GS graphics screen and save it as a Finder icon. If you own a Vitesse or LightningScan hand-held scanner, you can even use photographs of yourself or your friends as icons — the ultimate in GS/OS customization. Instant Icon also lets you enter that important file-attribute pathname information.

If you like your icons just the way they are, but would still like to control file attributes, consider **Icon Applicator**, a $10 shareware utility by John R. Majka. This program lets you enter file-attribute pathname information from the familiar *Open File* dialog box. You don't have to know a thing about the "techie" details of how or why icons work — only where your applications are stored. You'll never again have to see that cryptic GS/OS error message, "an application cannot be found for this document."

HELPING HANDS

What do you do if you want to look at a super-hi-res image? Run a paint program and load the graphic, right? Wouldn't it be easier to view all your pictures one right after another in quick slide-show fashion? Here's one desk accessory that's indispensable if you work with graphics. **ShowPic**, a freeware NDA written originally by Bruce Mendez, with later versions enhanced by Dave Leffler, can display at the click of a mouse all standard types of super-hi-res graphics, as well as some less-common varieties, such as 3200-color images. ShowPic can even convert graphics from one format to another, such as Print Shop GS to super hi-res, or 320 mode to 640.

Finder View 2, written by Brian Clark of Jupiter Systems, is a $10 shareware utility that lets you view GS graphics of virtually any type one at a time directly from the Finder desktop by clicking on each graphic's icon. Like ShowPic, Finder View displays all standard types of GS graphics. Upon payment of your shareware fee, Jupiter Systems will send you a slicker version that displays multiple graphics in slide-show fashion.

If you want something really out of the ordinary, try **AutoMenus INIT**, a $5 shareware gem written by Jay Krell. With AutoMenus installed, pull-down menus actually pull themselves down. Just move

your mouse cursor over the various selections in the menu bar, and you won't have to press and hold down the mouse button to scroll through them.

QUITTIN' TIME

When it comes time to exit a program, any of a number of utilities let you quickly quit from one application directly into another, without returning to the Finder.

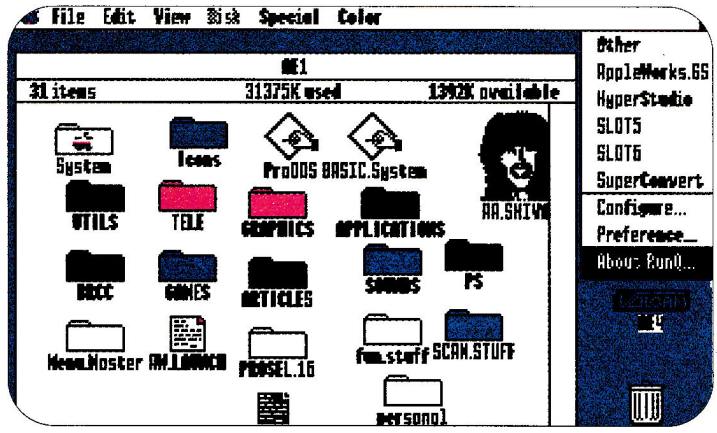
RunQ, for example, a $20 shareware INIT by Marcel Egloff, places a new menu-bar item at the top of your screen. Click on the *RunQ* menu icon, and you can enter a list of your favorite GS/OS programs, and switch easily back and forth among them. **Quit-To**, a $10 shareware CDA by Karl Bunker, allows similarly quick movement among ProDOS programs.

THE LIGHTER SIDE

Some "utilities" are just pure fun. If you like playing computer games, for example, imagine what it would be like to take a quick break in the midst of creating a database. Bill Tudor's $10 shareware program **Solitaire NDA** is a fabulous implementation of Klondike solitaire. Jim Surine's freeware NDA version of **Pac-Man** provides an outrageous amount of desktop fun, as the next generation of little buggers chase *you* around. France's Free Tools Association (FTA) has released an addicting freeware Tetris-style freeware game called **Fun Columns**. It's a CDA and can always be called up within AppleWorks for a quick round of fast action. And if you're tempting fate at work or in school, make sure you install Joe Jaworski's **Panic NDA**, too — when invoked, it'll quickly display what appears to be a sophisticated financial spreadsheet.

Some DAs offer special effects. **Eyes NDA** (author unknown) places a pair of eyes on your GS desktop, and wherever you move your mouse, the eyes follow. **Ack NDA**, a freeware goody by Jake Hoelter, places a graphic of Bill the Cat in a small window on your desktop. Tempt Bill by clicking on him with your mouse, and watch what he does.

Roby Sherman's freeware **Havoc NDA** creates some weird-but-dazzling illusions. **Meltdown 1**, by Jason Harper, and **Meltdown 2**, by Guy T. Rice, are freeware NDAs that make whatever's displayed on the GS screen "melt" like an ice-cream cone. **Grass NDA**, written by Jeff Erickson, causes vegetation to grow up from the bottom of the GS screen. These DAs actually serve a useful purpose, though, too. They're called *screen blankers*, and they prevent *phosphor burn*, a condition that can occur when you leave your monitor on a long time with no keyboard input. These neat NDAs can help prevent some pretty costly repair bills.



RunQ lets you switch among applications without returning to the Finder. Note scanned photo (top right) saved with Instant Icon.

The most widely acclaimed GS screen blanker is a $10 shareware CDEV named **Twilight**. Written by Jim Maricondo and Jonah Stich, Twilight is activated automatically after a user-defined period of inactivity, and displays some creative animated designs: a screen "melter," a floating Earth, and a bouncing Apple logo, among others.

If you're frustrated with Apple's treatment of the II line, you'll want to install the most infamous of the Twilight files: the Sculley blanker. It's an animated picture of John Sculley being shot, complete with realistic sound effects. Also supplied with Twilight is a "draw your own" module that lets you create blanker files yourself.

Poking fun at John Sculley seems to be a favorite activity of some Apple II programmers, as evidenced by the **Death to Sculley NDA** (author unknown). This freeware program displays an animated Sculley swinging at the end of a long rope.

INIT programmers frustrated with Apple have also been able to temper their feelings through humor. Karl Bunker says that "if the Apple II is dead, as many have been telling us, then we should all start using a mouse cursor that's appropriate to a dead computer." To that end, Bunker has created **Skull Cursor**, an INIT that changes the little arrow into somebody's cranium.

MANAGEMENT STYLE

As you can see, GS programmers are an inventive lot. As noted above, though, you may not have enough RAM to actually install and use every one of these options at the same time. Because DAs and INITs are loaded into memory during the GS/OS boot process, they may interfere with the normal operation of your system, preventing other programs from getting all the memory they need to run.

One way to monitor your DAs and INITs (without installing them manually as you need them) is to get ahold of a copy of **INIT Master**, a $10 shareware INIT file from Bill Tudor. Once you've installed it, hold down the option key and reboot. Partway through the load process, up pops a large window that lists every DA and INIT installed. At the click of a mouse, you can choose only those you're planning to use that session. The rest will just sit there, not conflicting with anything else.

Computing may make your life easier, but who says it has to bore your socks off in the process? Whether you're after fun or enhanced productivity, shareware and public-domain utilities are an easy way to give your GS a boost. And at these low, low prices, when you get tired of one, you can just try something else on for size. ❑

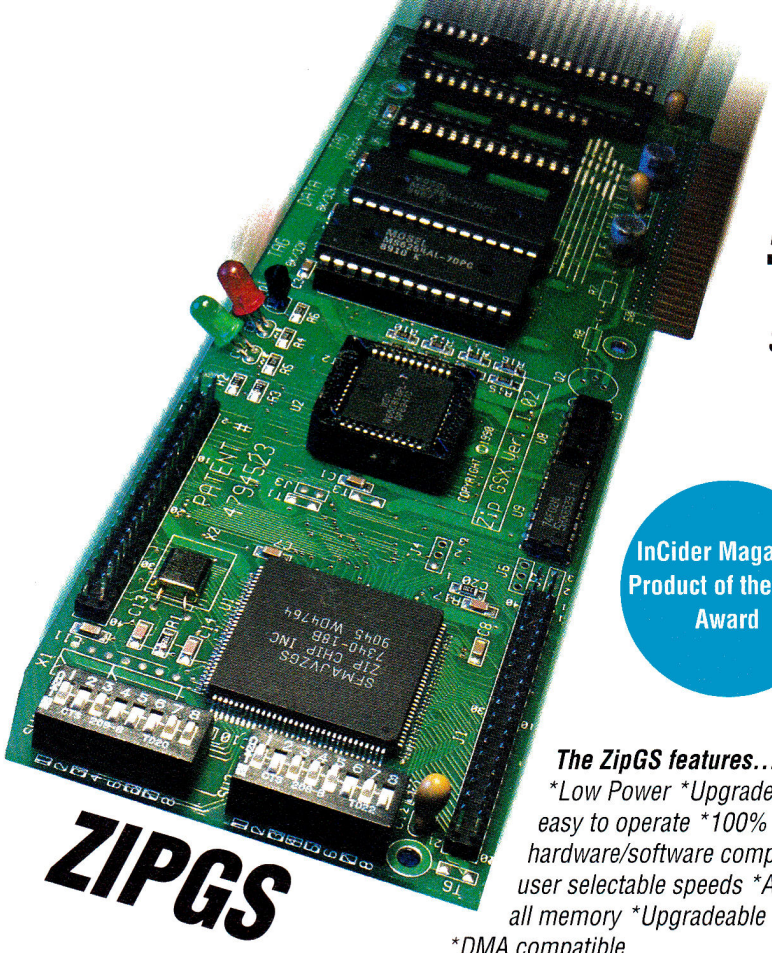
SOURCES

Most of the programs described here are available from Apple II user groups (call 800-538-9696 x500 to locate the one nearest you),on-line services such as **America Online** (800-227-6364), **CompuServe** (800-848-8199), and **GEnie** (800-638-9636), and various mail-order vendors such as the **Big Red Computer Club** (402-379-4680) and the **Public Domain Exchange** (408-496-0624).

As a service to inCider/A+ readers, we've put together a 3.5-inch 800K disk containing many of the programs discussed, plus a few surprises. Send a check or money order payable to Joe Kohn, in the amount of $5 (U.S. funds only), to 166 Alpine Street, San Rafael, CA 94901. The fee covers materials and shipping only; you're still under obligation to pay appropriate shareware fees to authors of the programs you use. **— J.K.**

EAT MY DUST Mac...

YOUR GS CAN RUN AS FAST AS A 40 MHz Mac
$149.00



ZIPGS

If you use...
**The Finder *AppleWorks GS *Managing Your Money *PrintShop GS *HyperCard IIGS *HyperStudio *Springboard Publisher *Platinum Paint *Quicken *Publish It, or any other GS software — then you need a ZipGS.*

Here's Why...
To use powerful programs, you need a powerful computer. The ZipGS gives you that power like never before. It comes standard with 8K cache and runs at a very speedy 7 MHz. (Your Apple IIGS now runs at about 2.6 MHz). The ZipGS gives you all the power you need now, and in the future, because it's also expandable... it will easily expand to a blazing fast 10 MHz with 64K cache.

With a ZipGS installed, your computer will perform like you always thought it should. Your computer will even out perform the expensive Macintosh. "Nibble" magazine said it this way, "Apple Computer take note: This chip makes a full featured GS word processor faster than several Macintosh word processors running on a monochrome display." (Monochrome displays are the fastest) ***Hallelujah! The ZipGS delivers.***

"InCider" magazine rated the ZipGS 4 1/2 stars. Their only complaint was the manual, we listened, and promptly improved it.

The ZipGS features...
**Low Power *Upgradeable *Very easy to operate *100% hardware/software compatible *16 user selectable speeds *Addresses all memory *Upgradeable to 10 MHz *DMA compatible*

Installation— *Anyone can install the ZipGS in a matter of minutes. No tools or special knowledge required.*

Reliable— *The entire accelerator is in one custom integrated circuit. The simplicity of the design guarantees a long, trouble-free life.*

Available— *The ZipGS has been shipping for over 1 year and is now the standard in accelerator speed, reliability, upgradeability and low cost. The ZipGS has no competition.*

ZipChip - IIe, IIc

If you have an Apple IIe or IIc, then you need a ZipChip. The ZipChip is the most popular Apple II accelerator by far. The ZipChip has been shipping for over 5 years.

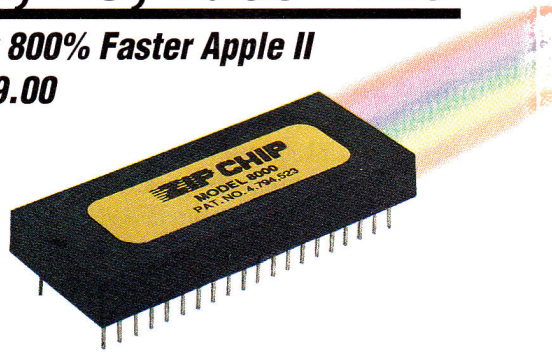
With a ZipChip installed*, your Apple II will run 800% faster, that's on a par with the fastest Macintosh or IBM's. Customers with ZipChips installed will never use an Apple II computer without one.*

Imagine all of your Apple II software running up to ***800% faster****, AppleWorks performing like you never thought possible, your desktop publisher faster than than the fastest Macintosh.*

IIe, IIc, Laser 128

Now 800% Faster Apple II
$139.00

InCider Magazine Product of the Year Award



Installation— *the ZipChip can be installed in minutes and will last the life of your computer. The ZipChip will take your Apple II into the 21st century.*

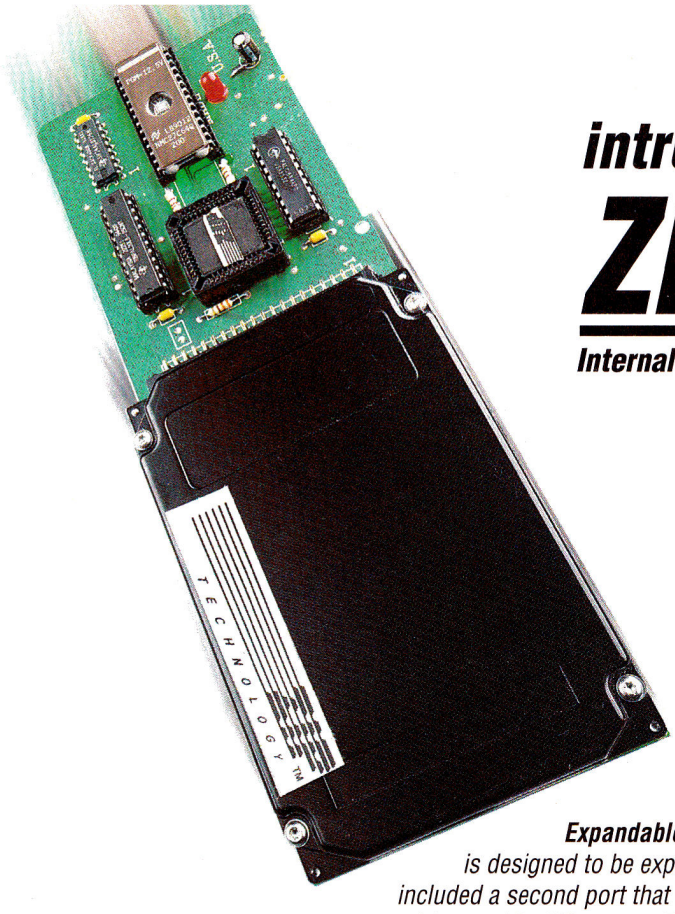
The ZipChip features
**Low Power *100% hardware/software compatibility *19 user selectable speeds *No slot required * RAMFast compatible *30 day money back guarantee and a one year warranty.*

The ZipChip features a new design allowing Zip Technology to produce the ZipChip faster at a lower cost. The new ZipChip is priced at just $139.00. This 8 Mhz model originally sold for $200.00, and now, as a result of our continued engineering, we have been able to lower our cost and we will pass the savings on to you.

Risk free money back guarantee...
If you are not happy with the ZipChip, just return it within 30 days for a refund.

Order Today
Call toll free
800-937-9737

Circle 189 on Reader Service Card.



introducing ZIPDRIVE™

Internal Hard Drive For Your Apple IIGS

Priced less than a second Apple 3.5 inch drive.

Starting at Only $399.00

"Hard disks are a necessity."

AppleWorks GS, HyperCard IIGS require more disk space than is available on a 3.5 inch drive. If you buy an additional 3.5 drive, you still end up swapping disks over and over. The ZipDrive will give you 25 times the storage capacity of a 3.5 for less money than another Apple 3.5 disk drive.

Introducing the ZipDrive...
The ZipDrive is shipped ready to go, it's partitioned, formatted, and the operating system is installed. ***The ZipDrive is sold as a complete, ready-to-use system, nothing else to buy.***

Easy to install and use— *The new ZipDrive* ***WORKS IN ANY SLOT*** *and is so easy to use that it redefines the term "user friendly." Included with your ZipDrive is a complete animated interactive introduction. You'll see on the screen, in graphic detail, everything you'll need to know about your your ZipDrive, including how to install, load and take care of it from the moment it comes out of the box. We include the latest IIGS system software and a program that will automatically install your favorite programs.*

Fast— *The ZipDrive is very fast. In many cases, it will out perform the DMA SCSI controllers. The ZipDrive comes with an ultra-fast 17 ms drive, and uses a special 16 bit patented controller.*

Expandable— *The ZipDrive is designed to be expandable. We've included a second port that will allow you to add up to 105 MB to your ZipDrive externally. The ZipDrive is the only internal drive that is designed to be expandable.*

Simple— *The ZipDrive is simple. All of the electronics have been reduced to one integrated circuit to help insure a long, trouble-free life. The simple design eliminates the need for expensive metal boxes, power supplies, fans and cables.*

Extras— *Included with the ZipGS (at no extra cost) is Vitesse's Salvation-Supreme, the very best hard disk management software ($199.95 list price).*

Features...
1. You will enjoy the protection of the comprehensive back-up and restore program. You can relax knowing that your data is safe.
2. An extensive volume checker and repair kit to keep nasty bugs from your data and fix any software errors.
3. Disk optimizer.
4. A complete set of disk utilities, like copy files, lock/unlock files, delete files and view graphics.
5. A complete menu system is included: boot your ZipDrive into a menu of all your favorite programs and boot any program at the touch of one key.
6. Works in any slot.
7. The ZipDrive is portable, take your data with you.

Two sizes available
The ZipDrive is available in two sizes, 20 MB and 40 MB. After the first of the year, 60 MB and 80 MB will be available.

Warranty— *The ZipDrive comes with a 30 day money back guarantee and a 1 year warranty.These new mechanisms are the most reliable ever produced.*

Order Today...

ZipDrive

ZipDrive	20 MB	only	$399.95
ZipDrive	40 MB	only	$599.95
ZipDrive	60 MB		call
ZipDrive	80 MB		call

ZipGS

ZipGS 7 Mhz/8K cache		$149.00
8 Mhz upgrade	add only	$29.95
9 Mhz upgrade	add only	$59.95
8K cache upgrade	add only	$19.95
ZipGS-10 ultra fast 10 Mhz		call

Power User Special

ZipDrive i40 & ZipGS 9/32 .....$799.00

ZipChip-8 Mhz.

ZipChip 8 Mhz. $139.00

Order today - call toll free
800-937-9737
Fax Orders call 310-337-9337

TECHNOLOGY™

5601 Slauson Ave
Suite 264
Culver City, CA
90230
310-337-1313

LET YOUR CREA

Illustration • Don Baker

TIVITY FLOW

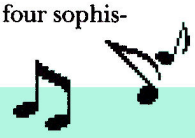
By JOE KOHN CONTRIBUTING EDITOR

The art of Apple II programming has come a long way in the last ten years — bigger and more complex languages, bigger and more complex applications. Yet as computer languages have become sophisticated and flexible enough to communicate with us in standard English, it's also true that programming is no longer solely the domain of engineers, experts, and hobbyists. In classrooms, museums, family rooms, and offices across the country, teachers and students, parents and children, adults and teens, and other enthusiastic users are creating interactive multimedia software for their Apple IIs — with no computer-programming experience.

What these modern-day software producers *do* have is an active imagination and information or a story they'd like to share with others. What allows these nonprogrammers to produce sophisticated software is *hypermedia* — authoring systems that let you create interactive, self-paced, nonlinear computer programs containing a combination of text, graphics, animation, sound, music, speech, and video.

Most of us believe that information is best organized in a linear manner, the way books and magazines are; concepts and conclusions are based on ideas that have already been delineated, and chapter 2 always follows chapter 1. The human brain, however, doesn't always think in a linear fashion. Accommodating those individual differences, truly creative software allows for any number of people to process the same information in a variety of ways; hypermedia authoring systems grant Apple II users the ability to design just such uniquely creative software themselves.

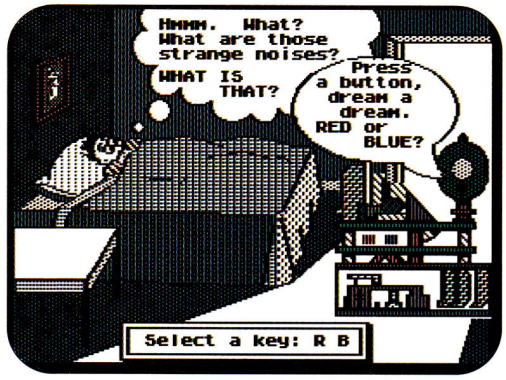
Apple Computer's HyperCard, available for both the Mac and the IIGS, and Roger Wagner's HyperStudio for the IIGS are the most widely known hypermedia authoring systems. Because these products receive so much publicity, many Apple IIe and IIc users are surprised to learn that there are four sophisticated hypermedia products that let them make their own computer programs. Techware's **Tutor-Tech**, TI&IE's **StoryWorks**, and Scholastic's **HyperScreen** and **Super Story Tree** have much in common, yet each has its own unique strengths. They all employ the same basic concepts and contain many of the same hypermedia building blocks found in HyperCard and HyperStudio, and they all share the same basic terminology. They all give you the power to create computerized interactive fiction, "twist-a-plot" stories, multiple-choice quizzes, self-paced lessons, adventure games, and audiovisual databases. Hypermedia authoring systems provide the tools; all you need to supply is information and some basic instructions on how the computer should display that information. Whether you want to create software to describe the latest current events, say, or simply to explain your hobby to others, hypermedia makes it easy, fast, and fun.



Pull out all the stops — text, graphics, sound, video. Apple II authoring systems give you all the tools you need to design interactive multimedia presentations.

Because all four products have been reviewed previously in *inCider/A+* (see the "Further Reading" box), let's quickly go over some terminology and take a second look at what these products have in common, as well as explore the major differences among them.

Then to help you decide which program is right for



Left, HyperScreen includes video and speech control. Right, Super Story Tree for grades 3 to 6.

you, we'll also talk about the organizations that publish them, examine some add-on products, and check out resources.

STACKING THE DECK

A program created with one of these hypermedia authoring systems is commonly referred to as a *stack*. A stack is composed of many individual computer screens, called *cards* or *pages*. You can link cards to other cards, or to other stacks. The most common way to link cards is the *button* — a special on-screen graphic. By activating one of these buttons, usually with a mouse click or a key press, you tell the program to move on in one of many directions. A card may contain multiple buttons, each leading to a different screen. Screens can contain text, sound effects, or graphics, or any combination of those media.

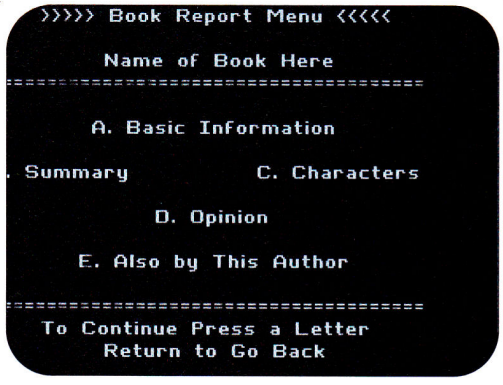
Three of the programs — Tutor-Tech, HyperScreen, and Super Story Tree — appear at first glance to be more alike than different. All sport a graphics-based Mac-style interface with pull-down menus. According to Scholastic, Super Story Tree is geared toward students in grades 3 through 6, and HyperScreen toward grades 7 through 12. Tutor-Tech, however, is used in both K–12 and college classrooms. Nearly 300 software developers, many of whom are teachers turned entrepreneurs, have created commercially available Tutor-Tech stacks.

Tutor-Tech, HyperScreen, and Super Story Tree also come with a feature that lets you design stacks for *self-booting* disks — stacks that can be booted and used by people who don't own the hypermedia program that created it.

A TEXTUAL APPROACH

StoryWorks, written by Robert C. Moore, takes a radically different approach to hypermedia. Published by the Teachers' Idea and Information Exchange, it's the only hypermedia program that works on all Apple IIs, including the 64K Apple II Plus; the others require a 128K IIe, IIc, or IIGS.

StoryWorks stacks are actually created with AppleWorks Classic's word-processing module, making it the only hypermedia program that requires another program. All stack design and development is conducted with AppleWorks. Because AppleWorks requires a IIe or later model, if you own an Apple II Plus, you'll need to purchase **PlusWorks** from Norwich Data Services (P.O. Box 356, East Norwich, NY 11732-0356, 800-221-3826, $19.95 plus $3 shipping, $49.95 plus $3 shipping for **PlusWorks XM** with memory expansion), a program that modifies AppleWorks to run on the earlier machine.



StoryWorks stacks are created with AppleWorks' word processor, but can contain sound effects.

TI&IE was formed by a group of educators in 1986, for the purpose of organizing an exchange of educationally oriented material and information. It originally distributed a monthly AppleWorks disk, available by subscription. In addition, TI&IE has added exceptional StoryWorks stacks to its collection, available to TI&IE subscribers at a deep discount. One disk contains *StackShells* — predesigned stacks you use, fill-in-the-blank style, to get your creative juices flowing.

StoryWorks is supplied on a single noncopy-protected 5.25-inch disk and comes with a well-written 32-page manual. The program disk contains a number of sample files; you can use them as master templates to create your own StoryWorks stacks. Just copy a template file (they include all relevant display commands) to another disk and start writing. It's a good idea to examine sample stacks first by loading them into AppleWorks, just to get a good idea of the structure of StoryWorks' stacks.

Stacks can contain sound effects; the program provides 26. You can also use graphics, but you're limited to ASCII images you create from the keyboard with AppleWorks. Stack designers are a pretty inventive bunch, overall — despite the apparent limitation, many StoryWorks stacks include maps, seating charts, timelines of history, and flowcharts. If you're creating StoryWorks stacks on a computer capable of displaying mousetext — the enhanced IIe, IIc, or IIGS — you can use those special characters for graphics, borders, and special visual effects.

StoryWorks stacks are divided into segments. Each can be displayed on the standard 80-column text screen, or a special 30-column screen showing large white characters on a black background. Each segment typed in AppleWorks must include display commands instructing StoryWorks on the way you want your information to appear, yet none of those commands is visible to the person using your stacks. Use AppleWorks' easy cut-and-paste functions to incorporate commands from master templates into your stacks.

StoryWorks may seem less full-featured than graphics-oriented programs, yet many educators prefer it because of its emphasis on text-based material. Phil Shapiro, a noted Apple II educator and president of Balloons Software, a company that produces educational programs and low-cost StoryWorks stack disks, says, "StoryWorks' lack of graphics is its great strength, since stack designers are forced to concentrate on content rather than context." The dozens of excellent StoryWorks stacks you'll find, created by both adults and children, verify Shapiro's point.

As it is, StoryWorks is an affordable way to bring hypermedia into the classroom. Once your students master it, you'll find a whole new outlet for aspiring writers. If you're a teacher, you'll love creating quizzes with StoryWorks and its built-in ability to "keep score." Teachers around the country give StoryWorks high marks. You will, too, if you choose it as your hypermedia system.

SCHOLASTIC TURNS A DOUBLE PLAY

Super Story Tree and HyperScreen, both written by George Brackett and published by Scholastic Software, let youngsters create interactive stories containing full-screen color graphics, music, sound effects, and special visual effects.

Super Story Tree is supplied in either 5.25- or 3.5-inch noncopy-protected disk format and comes with a 150-page manual describing all program commands. It's filled with pictures and charts, hints, and tips, and also has a special section offering practical advice for teachers on using the program in the classroom. A variety of graphics backgrounds and clip art, along with a library of sounds, music, borders, and fonts, is included.

Since seeing is believing, a well-designed tutorial stack is a must. As a motivator for elementary-school children, the tutorial tells a story, and then shows budding stack designers exactly how it was created. In addition, a good on-line help feature explains every command in every pull-down menu.

Super Story Tree can use any of Scholastic's **Booster Pack** graphics and sound libraries, giving young designers more clip art and special-effects resources than they'll be able to use in a single story stack. A number of painting and graphics tools are included with the program, as well, so youngsters can also create their own artwork from scratch. Special-education teachers will be happy to learn that Super Story Tree can be set up to work with single-switch devices.

You can create or browse through a story with mouse, joystick, or keyboard. Special navigation buttons called *links* offer three possible actions: advancing your story one screen; presenting a choice of branches, thus letting the reader direct the outcome; and moving to one screen some of the time, and another screen the rest of the time, thus introducing the element of chance into your story, and unleashing your creativity.

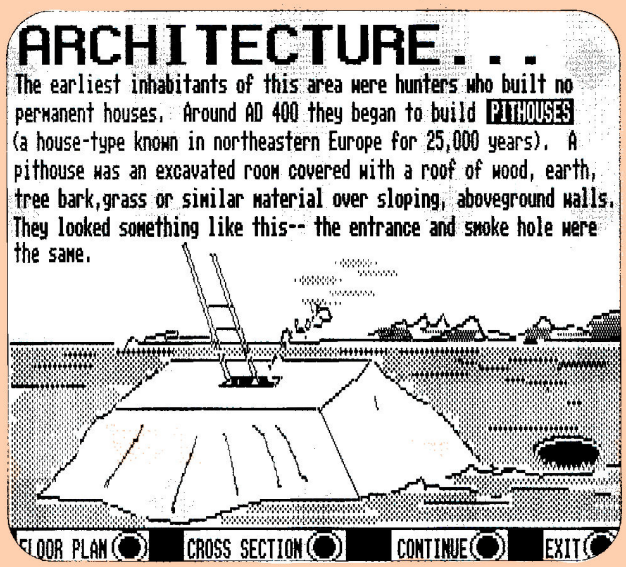
Although Super Story Tree is aimed at grades 3 through 6, younger children will love looking through stories written by their older siblings. Although not as full-featured as HyperScreen, there's no reason older kids won't enjoy using it to create custom stories. With its branching commands, for example, youngsters can create visual databases. Super Story Tree is a fun way to introduce young children to hypermedia. After they master the program and can use it to create graphics-oriented "twist-a-plot" stories and interactive fiction, they'll be eager to move up to Scholastic's other hypermedia product, HyperScreen.

HyperScreen is a full-blown hypermedia authoring system, similar in concept to HyperCard. In a way, it starts where Super Story Tree leaves off and lets you create much more sophisticated stacks. For starters, it can control a Pioneer LD-V4200 laser-disc player, so stacks can contain video sequences. It also works with the Apple II Video Overlay Card, so you can place navigational browsing buttons on top of a video image. HyperScreen also works

12TH-CENTURY ARTIFACTS, 20TH-CENTURY TECHNOLOGY

Rising out of the desert in the Four Corners area of the American Southwest, the abandoned cities of the Anasazi, or "Ancient Ones," present one of mankind's most intriguing archaeological mysteries. The cliff dwellings they left behind, nestled into the red rocks of Utah, Colorado, Arizona, and New Mexico, are the only vestiges of this prehistoric people who disappeared without a trace sometime before 1200 A.D.

Today, the Anasazi Heritage Center, a museum in Dolores, Colorado, operated by the U.S. Department of the Interior's Bureau of Land Management, is a repository of ancient objects found in the area. Here visitors can learn about the Anasazi via a pair of Tutor-Tech hypermedia stacks — **Anasazi Life**, by Michael Williams, and **The Last Pictograph**, by Victoria Atkins — that run continuously on the IIe and IIc computers in the Center's hands-on Discovery Room.



Tutor-Tech stacks at the Anasazi Heritage Center offer visitors a self-guided tour of the dwellings, environment, and art of this ancient people.

The stacks offer self-paced guided tours of slices of Anasazi life and art; visitors learn how the Anasazi constructed their multistoried apartment houses, and can see a cross-section of the living quarters. Running the stacks requires no special instructions. According to Tom Vaughan, an interpreter at the Center, the younger the visitor, the less coaxing needed to sit down in front of one of the Apple IIs.

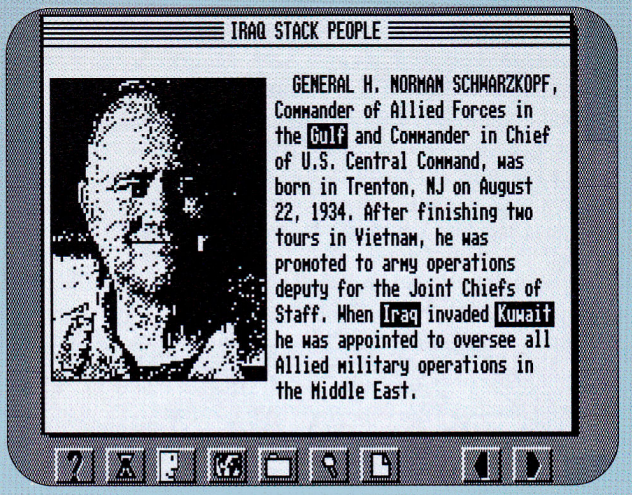
If you can't arrange a visit to the museum, these two Tutor-Tech stacks are in the public domain, and can be ordered from the Southwest Natural and Cultural Heritage Center (make checks payable to SNCHA), the nonprofit bookstore located at the museum. The cost is $5 per stack, plus $2 for shipping and handling: $7 for one program, or $12 for both. Send check or money order to BLM Anasazi Heritage Center, ATT: SNCHA, 27501 Highway 184, Dolores, CO 81323. (The Center's phone number is 303-882-4811.) You'll receive an unforgettable lesson on the importance of preserving our historical and cultural resources. **— J.K.**

IRAQ STACK

Less than five weeks after the Gulf War ended, the first comprehensive computer program about the crisis was released. Developed by Techware Corporation using its hypermedia authoring system Tutor-Tech, **Iraq Stack** is a complete course designed to help adults and children cope with relevant issues and information. Before the advent of hypermedia, it would have taken many months to compile into book form all the information contained in this application. [But does this time frame pose additional problems? For another viewpoint, see this month's Reviews section, p. 28. — eds.]

Iraq Stack includes six major modules: Middle East Time Line, People, Places, Databank, Issues, and Activities. Think of each module as a complete database — yet, unlike traditional bodies of information, all Iraq Stack databases are interconnected.

When you view the Time Line database, for example, you'll see maps of the area, digitized pictures of people associated with the war, and pertinent news accounts and other



Clicking on inverse-video names calls up additional information.

information. Important place names and names of significant people appear in inverse video (white on black). You can retrieve more-detailed information by choosing any of those highlighted names with joystick, mouse, or keyboard, or by clicking anywhere on maps of the region.

Exploring all sides of the conflict, the Issues section is especially pertinent to the classroom. Major topics are listed alphabetically, starting with Aid to the Middle East and concluding with Women's Roles in the War. Other controversial issues include the antiwar movement, hostages, arms control, and veteran's benefits. The Databank is an extensive database of Middle East facts and figures, beginning with the formation of the Arab League in 1945, and including information on many of the types of weapons deployed, complete with scanned photos. The Activities module offers a map-explorer section, a game that requires matching names of leaders with appropriate nations. A crossword puzzle and a series of thought-provoking essay questions are also included.

Iraq Stack works on any Apple IIe, IIc, IIGS, or Laser with 128K. It's a stand-alone package that doesn't require the Tutor-Tech program. It ships on four double-sided 5.25-inch disks or two 3.5-inch disks, and includes a poster-sized full-color copy of Hammond's Crisis Map of the Middle East. Iraq Stack is priced at $59; multicopy lab packs are available for schools. **— J.K.**

with an Echo or Cricket speech synthesizer, so that you can hear information as well as see it.

In addition to using graphics and clip art from Scholastic's Booster Packs, HyperScreen also lets you import any standard hi-res graphic, including ThunderScan or Quickie images. The program's numerous screen-transition effects are more sophisticated than Super Story Tree's, and you can also create simple animation sequences. A text editor is included, and you can import ASCII text created with another word processor.

HyperScreen employs nine different types of button actions. Buttons can, of course, link screens to other screens or stacks, but you can also use pop-up text buttons, which display text in a small window overlaid on the graphics screen. A "sound f/x" button plays music or sound effects, and the multifunction button can play music and then display a pop-up text box. If you have a synthesizer connected to your system, one special button invokes speech to read text aloud. A score button accumulates and reports on a browser's choices, making it possible to create a hypermedia multiple-choice test. One other special button type allows for text entry, so that you can create a hypermedia fill-in-the-blank test.

PIONEERING HYPERMEDIA

Tutor-Tech was the first Apple II hypermedia authoring system, predating even HyperCard for the Mac by about a year. It's been updated and revised several times, adding new capabilities to an already full-featured program. Tutor-Tech operates in a double-hi-res graphics-based environment, and, therefore, requires a 128K IIe, IIc, IIGS, or Laser128 or 128EX. Note that owing to the way the GS' RGB monitor displays double-hi-res graphics images, you must enter the Control Panel and toggle the display to monochrome. Tutor-Tech operates just fine with a single 5.25-inch disk drive. You can use a variety of input devices, including keyboard, mouse, joystick, touch screen, KoalaPad, and Muppet Keyboard.

Tutor-Tech is supplied on three noncopy-protected 5.25-inch disks. One disk contains the *Teacher* module, which lets you create hypermedia stacks; one contains the *Student* module, for browsing; and the third is a *Samples* disk with several ready-to-run hypermedia stacks and lessons. The *Gradebook* module, available as an add-on product, lets you automatically score, record, and report the results of an interactive hypermedia lesson, quiz, or test. Because Techware envisions that most stacks are created and viewed in an educational setting, a liberal license allows owners of Tutor-Tech to legally make 50 copies of the *Student* module, letting all users in a computer lab browse stacks at the same time. An affordable site license for the *Teacher* module is also available. Above all, Tutor-Tech is completely networkable, and will run on AppleShare, Corvus, and DigiCard systems, among others.

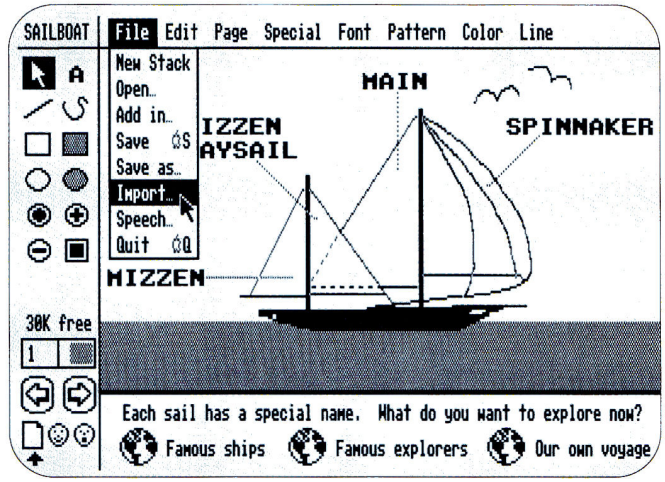
When you run the *Teacher* module, a Mac-style screen appears, with a menu bar across the top and a graphics toolbox, with 12 object-oriented writing and drawing tools, displayed vertically on the left. You build a stack by using those tools to place objects, such as text, graphics, or animation, anywhere on screen, thus creating your page. Tutor-Tech also lets you import graphics created with other programs, including The Print Shop, The Newsroom, MousePaint, and Dazzle Draw. Your stacks can also contain digitized graphics produced with a ThunderScan or Quickie scanner or a ComputerEyes video unit.

Tutor-Tech employs four kinds of buttons: one for correct answers, one for incorrect answers, one for a typed-in response, and an arrow to proceed to the next page or another stack. This variety allows for yes/no answers, multiple-choice responses, or fill-in-the-blank. You can hide buttons under a graphic so that the browser clicks on an object rather than on the button itself. Correct-answer buttons can lead to another page, to a motivational page displaying a graphic or message offering positive reinforcement, or to another stack. Incorrect-answer buttons can lead to a remedial page, a help page, or a hint page.

Buttons can also lead to external devices. Tutor-Tech is a true multimedia product — that is, it can retrieve information stored on floppy disk, videodisc, and certain models of industrial and broadcast videocassette recorders. (Note that to connect a videodisc player or VCR to an Apple II, you must have a corresponding interface card. BCD Company's model #450 works with several Panasonic and Sony industrial VCRs. A Super Serial Card and appropriate cables are required for videodisc usage.) Tutor-Tech is fully compatible with the Video Overlay Board, letting you place buttons on top of video images, and also works with the Echo speech synthesizer. With the optional **Tutor-Talk Tape Cassette Controller** (available from Ommega Corp., 15476 NW 75th Court, Miami Lakes, FL 33016, 305-558-0097, $195), you can use an audio-cassette tape recorder to incorporate real speech into stacks.

Although Tutor-Tech's ideal for classroom use, it's in no way limited to schools. Hypermedia displays are starting to appear in diverse settings such as museums, educational conferences, and computer trade shows. (See the accompanying sidebar, "12th-Century Artifacts, 20th-Century Technology.") Any interaction between human and computer is fertile ground for hypermedia. A number of videodiscs have been created for use with hypermedia software, and, as noted above, you can incorporate information retrieved from those sources into Tutor-Tech stacks. Because of the Apple II's ability to manage large amounts of information and to respond to browser input, using a videodisc with Tutor-Tech will add a whole new dimension to audiovisual databases containing real-world images. Educationally oriented videodiscs are currently available in the areas of life science, earth science, physical science, art history, and current events. (See the accompanying "Iraq Stack" sidebar.)

Techware is active in providing ongoing support. For example, it publishes a free quarterly newsletter, ***The Stack Exchange***,



Tutor-Tech's Mac-style screen features a menu bar and graphics toolbox.

offering tutorials, hints and tips, and a question-and-answer column, as well as a list of the latest add-on resources available for Tutor-Tech; it's a must-have publication for stack designers. Techware also conducts a monthly contest, encouraging stack designers to submit their work. The best of those entries are offered, at an affordable price, through *The Stack Exchange* as public-domain or shareware software. In addition, a number of commercial stacks are available through the newsletter. Techware also makes available a free demo disk of the *Teacher* module.

NOT JUST HYPE

All the Apple II hypermedia programs mentioned here help you create your own high-quality interactive software. All four packages deliver hypermedia to your Apple II desktop, although each does it in a different manner. Picking the right one will depend on your target audience, whether you want a hypertext construction set or a graphics-based hypermedia program, and whether you'll want to use hypermedia to control laser-disc players and VCRs. Regardless of which program you choose, the important thing is to take the plunge and let your creativity flow through hypermedia. ❑

CONTRIBUTING EDITOR JOE KOHN IS A COMPUTER CONSULTANT SPECIALIZING IN APPLE SYSTEMS. WRITE TO HIM AT 166 ALPINE STREET, SAN RAFAEL, CA 94901. ENCLOSE AN SASE IF YOU'D LIKE A PERSONAL REPLY.

FURTHER READING

"Curing the 8-Bit Blues" September 1989, p. 48

"StoryWorks" Reviews, April 1990, p. 32

"HyperScreen: On the Button" Editors' Choice, May 1990, p. 96
Reviews, September 1990, p. 38

"Super Story Tree" Reviews, October 1990, p. 75

"Exploring Hypermedia" November 1990, p. 36

"CD-ROM Comes of Age" May 1991, p. 44

"A Star Is Reborn" September 1991, p. 58

"Integration for a New Generation" November 1991, p. 24

"Sound and Image: The World on a Disc" November 1991, p. 30

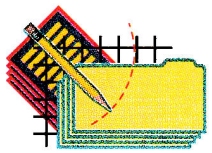
"Iraq Stack" Reviews, January 1992, p. 28

PRODUCT INFORMATION

HyperScreen, $99.95
Super Story Tree, $79.95
Booster Packs, $29.95 each
Scholastic Software
730 Broadway
New York, NY 10003
(212) 505-3000

StoryWorks
Teachers' Idea
and Information Exchange
P.O. Box 6229
Lincoln, NE 68506
(402) 483-6987
$49.95

Tutor-Tech Hypermedia Toolkit, $195
Gradebook, $95
The Stack Exchange, free to registered users
Demo Disk, free
Techware Corporation
P.O. Box 151085
Altamonte Springs, FL 32715-1085
(407) 695-9000
(800) 34-REACH



EASY DOES IT

Make 1992 the year of the dollar in your household.

By RUTH K. WITKIN

HAPPY 1992! START THE NEW YEAR right with a budget that helps you manage your money smarter and faster. If you frittered away your money in 1991, now's the time to develop a sensible spending and savings plan.

Figure 1 shows a truly easy-to-create budget spreadsheet. And I mean *easy*. You'll find no fancy formulas or formats — only a listing of incomes, deductions, and expenses (projected and actual). The instructions for creating this budget are step-by-step all the way. There are no set-up summaries to wrestle with. So, if you've ever felt even a wee bit intimidated by the AppleWorks spreadsheet, this is your chance to tackle it with full confidence.

A SPREADSHEET FROM SCRATCH

Load the AppleWorks program and create a new spreadsheet file named **EASY-BUDGET**. The spreadsheet *Review/Add/Change* screen appears with the cursor in cell A1.

First, enter a double line across row 2 in columns A through F: Place the cursor on A2 and type quotation marks ("). Hold down the equal-sign key until the sign reaches the right edge of F2, and hit Return. Leave the cursor on A2 and copy the row to the clipboard: Press Open apple-C (OA-C) to start the *Copy* command, type **T** (for *To clipboard*), press Return to confirm *Rows*, and hit Return again.

You need the same line in rows 42 and 48, so copy from the clipboard: Place the cursor on A42, press OA-C, and type **F** (for *From clipboard*). Now place the cursor on A48, press OA-C, and type **F** again.

Next, enter a single line across row 4 in columns A through F: Press OA-2, then Up Arrow twice to reach A4. Type quotation marks, hold down the minus-sign key until the sign reaches the right edge of F4, and hit Return. Enter the same type of line in A14 and B14: Place the cursor on A14 and type quotation marks. Hold down the minus-sign key until the sign reaches the right edge of B14, and hit Return.

Now enter the short line that separates the list of income amounts from its total: Place the cursor on B9 and type quotation marks. Press the spacebar twice to indent the line, then press the minus-sign key seven times, and hit Return. Leave the cursor on B9 and copy the line to the clipboard: Press OA-C, type **T** (for *To clipboard*), type **B** (for *Block*), and hit the return key again.

Now use the clipboard to copy the line to the other cells that need it: Place the cursor on B32, press OA-C, and type **F**. Now place the cursor on E39, press OA-C, and type **F**. And finally, place the cursor on F39, press OA-C, and type **F**.

CHANGING THE COLUMN WIDTH

Each column is nine characters wide. To give the labels in column A more room, widen the column to 19 characters: Place the cursor on A1 and press OA-L. Type **C** (for *Columns*) and press Return. Type **C** (for *Column width*), press OA-Right Arrow ten times, and hit Return again. In the same way, change these column widths: Increase column B by one character (to ten characters); reduce (use OA-Left Arrow) column C by six characters (to three characters); and increase column D by 13 characters (to 22 characters). Now increase columns E and F by one character (to ten characters): Place the cursor on E1 and press OA-L. Type **C**, hit Right Arrow to highlight columns E and F, and press Return. Type **C** again, press OA-Right Arrow once, and hit Return again.

ENTERING LABELS AND NUMBERS

Figure 2 shows the sample labels and numbers in the budget spreadsheet. Two special instructions apply here:

- The totals labels in A10, A33, and D40 are indented with two spaces to set them off from the rest of the labels. Before typing each of these labels, type quotation marks and press the spacebar twice.
- Before typing the labels in cell A43 (****PROJECTED:**) and in cell D43 (****ACTUAL:**), type quotation marks to tell AppleWorks the asterisks are text, not mathematical operators.

Referring to **Figure 2**, type the labels and numbers. Don't bother to press Return after each entry. Simply moving the cursor to the next cell that needs an entry serves the same purpose. When you're finished, press Return.

All the numbers are dollar amounts, so make dollars with no decimal places the standard value: Press OA-V and hit Return to confirm *Value* format. Then type **D** (for *Dollars*) and hit Return again to confirm no decimal places.

Now use the *Layout* command to right-align labels: Place the cursor on B3 and press OA-L. Press Return to confirm *Entry*, type **L** to choose *Label* format, and type **R** to choose *Right justify*. Next, place the cursor on B13 and press OA-L. Press Return and type LR.

And finally, place the cursor on E3 and press OA-L. This time, type **B** (for *Block*), move the cursor to F3 (so that both E3 and F3 are highlighted), and hit Return.

Type **LR**. Now press OA-S (*Save*) to store all your work on disk.

ENTERING THE FORMULAS

Now enter the formulas that perform your calculations. Their locations are the highlighted areas in **Figure 1**. First, read how the formula works, then place the cursor on the cell receiving the formula. Enter cell coordinates in the formula by moving the cursor to the cell location and pressing Return; type everything else.

When each formula is complete, compare the characters on your screen with those shown here. If everything agrees, press the return key. If something's amiss, press the escape key and start again.

FORMULA 1: TOTAL INCOME

Formula 1 sums the income items (B8 through B5) and enters the result in B10. As with the other SUM formulas, it includes the lines above (B4) and below (B9) the items.

Cell location: B10

Formula: @SUM(B9.B4)

Protect Formula 1 from accidental change: Leave the cursor on B10; press OA-L to bring up the *Layout* screen. Hit Return to confirm *Entry* and type **PN** (*Protection Nothing*).

FORMULA 2: TOTAL DEDUCTIONS

Formula 2 sums the payroll deductions (B31 through B15) and enters the result in B33.

Cell location: B33

Formula: @SUM(B32.B14)

Protect Formula 2 as you did Formula 1: Leave your cursor on B33, press OA-L, and press Return. Type **PN**.

FORMULA 3: TOTAL BUDGETED/SPENT

Formula 3 sums the projected amounts in column E (E38 through E5) to produce the total projected amount, including savings, in cell E40.

Cell location: E40

Formula: @SUM(E39.E4)

Now protect Formula 3: Leave your cursor on E40, press OA-L, and press the return key. Type **PN**. Now copy Formula 3 and its protection to F40: Press OA-C and hit Return twice to confirm *Within worksheet* and the *Source*. Press Right Arrow to highlight E40 and F40, and hit Return again. In the entry line at the bottom of the screen, AppleWorks highlights E39. All three references in this formula (E39, E4, and E10) are *relative*, so press OA-R.

FORMULA 4: DISPOSABLE INCOME

Formula 4 subtracts total deductions (B33) from gross income (B10) to produce the disposable income in B44.

Cell location: B44

Formula: +B10–B33

You'll protect Formula 4 after you enter the rest of the formulas.

FORMULA 5: TOTAL BUDGETED

Formula 5 subtracts the savings amount (E10) from the total budgeted (E40) and enters the result in B45.

Cell location: B45

Formula: +E40–E10

FORMULA 6: TOTAL SAVED

Formula 6 adds the payroll-savings amounts in B25 and B26, and the personal-savings amount in E10 to produce the total saved in B46.

Cell location: B46

Formula: @SUM(B25.B26,E10)

FORMULA 7: UNDER OR OVER INCOME

Formula 7 subtracts the total amount budgeted and saved (B45 and B46) from disposable income (B44) to show you, in B47, how much your spending projections and savings are under or over your income.

Cell location: B47

Formula: +B44–(B45+B46)

```
==========A==========B======C==========D==========E=========F=====
  1|                EASY BUDGET: JANUARY 1992
  2|=============================================================================
  3|GROSS INCOME          AMOUNT   EXPENSES                PROJECTED    ACTUAL
  4|-----------------------------------------------------------------------------
  5|Self                  $4,000   Rent or Mortgage         $1,275     $1,275
  6|Spouse                $3,750   Taxes & Insurance          $118       $118
  7|Other                    $0   Utilities                   $78        $70
  8|Other                    $0   Phone                       $56        $94
  9|                      -------  Grocery Shopping           $535       $480
 10|  TOTAL INCOME        $7,750 1 Savings                   $425       $525
 11|                               Clothing                  $225       $275
 12|                               Grooming                   $65        $97
 13|PAYROLL DEDUCTIONS     AMOUNT  Transportation            $166       $166
 14|-----------------------------  Car Insurance               $0         $0
 15|Federal Withholding   $1,156   Car Repairs                $50       $187
 16|State Withholding       $462   Car Loan Payment          $465       $465
 17|City Withholding         $34   College Loan Payment      $230       $230
 18|FICA (Soc Security)     $592   Other Loans & Debts        $80        $80
 19|Retirement (401K)        $40   Doctor (Unreimbursed)      $0         $0
 20|Medical Insurance       $28   Dentist (Unreimb)          $60        $85
 21|Dental Insurance          $0   Medication (Unreimb)       $0         $0
 22|Life Insurance            $0   Education                  $0         $0
 23|Advances                  $0   Professional              $25        $25
 24|Union Dues                $0   Recreation                $85       $125
 25|Payroll Savings         $100   Sports                    $25        $25
 26|Savings Bonds             $0   Hobbies                    $0         $0
 27|Stock                     $0   Books & Magazines         $25        $25
 28|Charity                   $0   Meals Out                 $95       $165
 29|Uniforms                  $0   Vacation                 $125       $125
 30|Other                     $0   Baby Sitter                $0         $0
 31|Other                     $0   Maintenance & Repairs      $0       $415
 32|                      -------  Cable/Pay TV              $52        $52
 33|  TOTAL DEDUCTIONS    $2,412 2 Gifts & Contribs          $60        $60
 34|                               Legal & Financial Svc      $0         $0
 35|                               Child Support              $0         $0
 36|                               Alimony                    $0         $0
 37|                               Other                      $0         $0
 38|                               Other                      $0         $0
 39|                                                       -------    -------
 40|                                 TOTAL BUDGETED/SPENT  $4,320 3   $5,164
 41|
 42|=============================================================================
 43|**PROJECTED:                   **ACTUAL:
 44|DISPOSABLE INCOME     $5,338 4 DISPOSABLE INCOME       $5,338
 45|TOTAL BUDGETED        $3,895 5 TOTAL SPENT             $4,639
 46|TOTAL SAVED             $525 6 TOTAL SAVED               $625
 47|UNDER(OVER) INCOME      $918 7 UNDER(OVER) INCOME        $74
 48|=============================================================================
```

Figure 1. Easy budget spreadsheet to help you start the new year right.

Now copy the labels and formulas in A44 through B47 to D44 through E47: Place the cursor on A44 and press OA-C. Hit Return to confirm *Within worksheet*. Press Down Arrow three times and Right Arrow once, then hit Return again. Press Right Arrow three times to move the cursor to D44, and hit Return again. Make all cell references *absolute* by pressing OA-Return.

It's been a while since you stored this spreadsheet on disk, so press OA-S and relax while AppleWorks does its thing.

EDITING LABELS AND FORMULAS

Certain elements in the labels and formulas you just copied need to be changed, as shown in **Figure 1**. Retyping can be time-wasting, so here's how to edit labels and formulas.

First, edit a label: Place the cursor on D45 and press OA-U to put the label on the entry line. Move the cursor to the *B*, press OA-Y to delete *BUDGETED*, type **SPENT**, and hit Return.

Now edit the copy of Formula 5: Place the cursor on E45 and press OA-U. Press Right Arrow to move to the *E* in *E40*, press OA-E to switch to the overtype cursor, type **F** (to change the cell location to *F40*), move to the next *E* and type **F** (to change that location to *F10*), and hit Return.

Next, edit the copy of Formula 6: Place the cursor on E46 and press OA-U. Move to the *E* in the last cell location, type **F** (to change the cell location to *F10*), and hit Return.

	A	B	C	D	E	F
1		EASY BUDGET: JANUARY 1992				
2						
3	GROSS INCOME	AMOUNT	EXPENSES	PROJECTED	ACTUAL	
4						
5	Self	4000	Rent or Mortgage	1175	1175	
6	Spouse	3750	Taxes & Insurance	118	118	
7	Other	0	Utilities	72	70	
8	Other	0	Phone	56	89	
9		--------	Grocery Shopping	500	479	
10	TOTAL INCOME		Savings	350	350	
11			Clothing	225	275	
12			Grooming	65	97	
13	PAYROLL DEDUCTIONS	AMOUNT	Transportation	166	166	
14			Car Insurance	0	0	
15	Federal Withholding	1156	Car Repairs	50	187	
16	State Withholding	462	Car Loan Payment	465	465	
17	City Withholding	34	College Loan Payment	230	230	
18	FICA (Soc Security)	592	Other Loans & Debts	80	80	
19	Retirement (401K)	40	Doctor (Unreimbursed)	0	0	
20	Medical Insurance	28	Dentist (Unreimb)	60	85	
21	Dental Insurance	0	Medication (Unreimb)	0	0	
22	Life Insurance	0	Education	0	0	
23	Advances	0	Professional	25	25	
24	Union Dues	0	Recreation	85	125	
25	Payroll Savings	100	Sports	25	25	
26	Savings Bonds	0	Hobbies	0	0	
27	Stock	0	Books & Magazines	25	25	
28	Charity	0	Meals Out	95	165	
29	Uniforms	0	Vacation	50	50	
30	Other	0	Baby Sitter	0	0	
31	Other	0	Maintenance & Repairs	0	415	
32		-------	Cable/Pay TV	52	52	
33	TOTAL DEDUCTIONS		Gifts & Contribs	60	60	
34			Legal & Financial Svc	0	0	
35			Child Support	0	0	
36			Alimony	0	0	
37			Other	0	0	
38			Other	0	0	
39				-------	-------	
40			TOTAL BUDGETED/SPENT			
41						
42						
43	**PROJECTED:		**ACTUAL:			
44	DISPOSABLE INCOME					
45	TOTAL BUDGETED					
46	TOTAL SAVED					
47	UNDER(OVER) INCOME					
48						

Figure 2. Labels and practice numbers in easy budget spreadsheet.

And finally, edit the copy of Formula 7: Place the cursor on E47 and press OA-U. Overtype each *B* in the formula with **E** to make the formula *+E44–(E45+E46)*, and hit Return.

Now protect the labels and formulas in rows 43 through 47: Place the cursor on A43 and press OA-L. Type **B** (for *Block*) and move the cursor up to E47. Press Return and type **PN**.

Press OA-K to make sure everything is recalculated properly. Your spreadsheet should now look like the one in **Figure 1**.

PRINTING YOUR SPREADSHEET

The budget is 74 characters wide and prints ten characters to the inch. To position it well on the printed page, change the margin settings: Leave the cursor where it is and press OA-O to bring up the *Printer Options* screen. Type **LM** (for *Left Margin*) and press Return. Type **.3** and hit Return again. Now type **RM** (for *Right Margin*) and press Return. Type **.3** and hit Return again. Finally, type **TM** (for *Top Margin*) and press Return. Type **.6** and hit Return again.

All other print settings remain at AppleWorks standards. Press OA-S to store this final version on disk, which also returns the spreadsheet to the screen.

Now turn on your printer and print your spreadsheet: Leave the cursor where it is and press OA-P to bring up the *Print* screen. Hit Return to confirm *All*. Press Return to select the printer (or type a printer number, then press Return), type the date (or, if you have a computer clock, type @ — the "at" sign — to have AppleWorks enter the date for you), and hit Return twice, the second time for one copy. The printer works away, and there's the spreadsheet.

NEXT MONTH'S BUDGET

Now pretend you're ready to work on your February budget. You'll use the January budget as a template, so save it under a new filename: Press OA-N and then OA-Y to delete the current filename. Type **BUDFEB** and press Return. Now press OA-S to store the new spreadsheet on disk.

To ready the spreadsheet for February, place the cursor on D1 and type **FEBRUARY 1992**. Now blank out the numbers

in column F to make room for new entries: Place the cursor on F5 and press OA-B. Type **B** (for *Block*), press OA-7, then Down Arrow three times to highlight the cells to F38, and hit Return. Now overtype any of the remaining numbers that need to be changed, making sure to store the spreadsheet at regular intervals. During or at the end of the month, enter what you spent to see how well you're sticking to your budget.

OPENING A SECOND WINDOW

You can see how projections would affect your personal bottom line by keeping the results in B44 through B47 in view. All you need do is open a second window: Position the spreadsheet so that row 47 is the last row on the screen. Now place the cursor on B42 and press OA-W to bring up the *Windows* screen. Type **T** (for *Top and bottom*). Press Down Arrow five times so that rows 43 through 47 are visible.

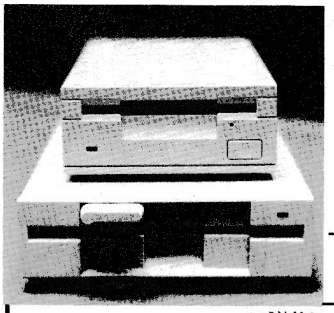
To see how well this works, press OA-J to jump the cursor into the top window, then change some projections to reflect a happy event: You paid off the car loan in January and now want to apply some of that amount to education (a course called *BASIC 101*) and to savings. Place the cursor on E16 and type **0**. Move the cursor to E22 and type **250**. Move the cursor to E10, type **565**, and hit Return. Instantly, AppleWorks changes the amounts in the *Projected* area to reflect the new numbers.

You can store a second window with a spreadsheet. The printed spreadsheet, however, won't show even a hint of another window. Now close the second window: Leave your cursor where it is, press OA-W, and press Return to confirm *One*. Press OA-S to store the February budget on disk with the changes.

COMING UP

Yup, it's that time again — income-tax time. And, once again, you'll create the spreadsheet that gives you an advance look at your income-tax exposure. This is one of AppleWorks in Action's most popular columns. Don't miss it. ❑

WRITE TO CONTRIBUTING EDITOR RUTH K. WITKIN AT 5 PATRICIA STREET, PLAINVIEW, NY 11803. ENCLOSE A SELF-ADDRESSED, STAMPED ENVELOPE IF YOU'D LIKE A REPLY.



MPD 5¼" DISK DRIVES FOR:
1 Year Warranty Parts & Labor
100% Compatible
Super Quiet
Cable Included
Apple II, II+, IIe Franklin Ace 1000 $89.00
Apple IIc, IIc+, IIGS Apple IIe UniDisk Laser 128 $99.00
Apple IIc+, IIGS Daisy Chain $99.00
AMR 3½" Disk Drive For Apple IIc+ & IIGS $199.00

PRO TERM $78.50
Memory Chips ..... Call
MPD 4 Meg GS Card
0 Meg $59.00
1 Meg $114.00
2 Meg $169.00
4 Meg $279.00
SUPER EXPANDER
IIe 0K to 1 Meg ..... from $52.50
IIc 0K to 1 Meg ..... from $65.50
GS MOUSE $59.00
SWITCH BOXES
DIN 8 A/B $24.95
DIN 8 A/B/C/D $29.95
DB 25 A/B $24.95
DB 25 A/B/C/D $34.95
Parallel A/B $24.95
Parallel A/B/C/D $34.95
Extended 80 Column Card With 64K for Apple IIe
100% Appleworks Compatible
5 Year Warranty
$38.95
SUPER SERIAL CARD
100% Apple Compatible
5 Year Warranty $48.95
Graphics Printer Card w/Cable For Apple II+ & IIe
5 Year Warranty
Parallel $44.95
DISKETTE STORAGE W/Lock
5¼ Holds 70 Disks $6.95
5¼ Holds 100 Disks $8.95
5¼ Holds 120 Disks $10.95
3½ Holds 100 Disks $8.95
II+ OWNERS
16K Card $34.95
128K Card $64.95
80 Column Card $48.95
Plus Works $49.00
5 Year Warranty
Prices subject to change without notice.

UNIVERSAL DISK CONTROLLER
Run 800K Disk Drives on your II+ and IIe
$64.95
800K DISK DRIVE 3½
for II+, IIe, MAC, LASER 128
$179.00
Disk Controller Card For Apple II, II+ & IIe
5 Year Warranty
$34.95
CPM Card $34.95
IIe Numeric Keypad $34.95
II+ & IIe RF Modulator $15.95
Cooling Fan for Apple II+ & IIe With Surge Surpressor $26.95
Cooling Fan For Apple IIGS
$19.95
No Noise Interference
ACCESSORIES
Mouse Pad $4.95
Disk Notcher $4.50
Disk Clean 5 ¼ $4.00
Disk Clean 3½ $4.00
Mouse Pocket $4.95
Amber Monitor $99.00
Replacement IIe Keyboard $55.00
7 Amp. Pwr. Supply II, II+ & IIe $49.00
Joystick for Apple IIe, IIc, IIc+ & IIGS
With Fire Button
Same as Mach III
$24.95
Cables From $9.95
IIe to Modem
IIc to Modem
IIe to IMG I
IIc to IMG II
IIe to IMG II
Others
Talk & Data Kits
SCSI Cables
GS Power Supply 7 Amp.
$69.00

We Ship 2nd Day Air Continental US Only
VISA & MASTERCARD — NO EXTRA CHARGE
DEALER PRICING
Shipping Most Items $6.00 / Drives $8.00 / C.O.D. + $4.00
We Ship 2nd Day Air Continental US Only
MEMORY PLUS DISTRIBUTORS, INC.
505 South 48th Street, Suite #104
Tempe, Arizona 85281
(602) 820-8819
FAX# (602) 968-3211
Serving Apple Users Since 1983
We carry only the Highest Quality products for your Apple. That's why we are the LARGEST and the BEST!
9 a.m. to 4 p.m. M.S.T. Mon - Fri.
University & School P.O. Accepted
20% Restocking charge on returned items
Circle 248 on Reader Service Card.

Programs, Peripherals

HOME DESIGNER'S DREAM
Design Your Own Home Architecture, Landscape or Interiors by Abracadata. Now you can have a designer home with a most prestigious name: yours. Draw floor plans, elevations, structural details the way you want them. Build interior and landscape designs with separate packages. All packages come with pre-drawn shapes.
Suggested Retail GS $89.95
Programs Plus Price.....$47.
Suggested Retail $69.95
Programs Plus Price.....$37.

ACCELERATORS /RAMCARDS

American Micro Research (Micro Sci)
80/64E 80 Column 64K Card *(IIe only)* .....49.
Apple Computer
Apple IIe Enhancement Kit .....58.
Apple IIe Extended 80 Col. Card....89.
Applied Engineering
GS-Ram Plus 1MG .....199.
GS-Ram Plus 2MG .....293.
GS-Ram Plus 3MG .....379.
GS-Ram II 1MG .....142.
GS-Ram II 2MG .....219.
GS-Ram II 4MG .....369.
GS-Ultra 1MG .....212.
GS-Ultra 2MG .....279.
GS-Ultra 512K .....159.
PC Transporter (768K) .....255.
PC Transporter Installation Kit GS ...37.
PC Transporter Installation Kit IIE ...29.
Ram Express II 1024K .....174.
Ram Express II 256K .....141.
Ram Express II 512K .....156.
RamFactor 1MG .....229.
RamFactor 512K .....189.
RamWorks III 1MG .....220.
RamWorks III 256K .....133.
RamWorks III 512K .....160.
TransWarp Accelerator *(GS)* .....260.
TransWarp Original Accelerator.....88.
ViewMaster 80 *(II+)* .....124.
Z-Ram Ultra 2 1MG .....277.
Z-Ram Ultra 2 256K .....191.
Z-Ram Ultra 2 512K .....220.
Z-Ram Ultra 3 1 MG .....292.
Chips
Chips Set 256K 120 or 150 NS.....19.
CV Technologies
GS Memory Board.....89.
Harris Labs
GS Load 256K *(3 pack)* .....69.
GS Sauce 1MG.....132.
GS Sauce 2MG.....169.
GS Sauce 4MG.....307.
GS Sauce Card "O" K *(GS)*.....75.
Zip Technology
Zip Chip 4 MHZ .....98.
Zip Chip 8 MHZ .....139.
Zip Chip Model 1600 *(GS)* **SPECIAL** 239.

ACCESSORIES

Advanced Gravis
Advanced Gravis' Joystick *(AP & GS)*.....39.
MouseStick ADB *(GS)* .....59.
Apple Computer
Apple Mouse IIe .....118.
Disk Controller Card .....68.
Extended Keyboard ADB.....175.
Video Overlay Card.....428.
Applied Engineering
Audio Animator *(GS)*.....155.
Conserver *(GS)* .....73.
High Output Power Supply.....59.
IIGS Heavy Duty Power Supply .....77.
Sonic Blaster *(GS)* .....94.
TimeMaster .....77.
Transporter Keyboard .....100.
CH Products
Flight Stick.....46.
Mach III Joystick .....29.
Mach IV Joystick .....62.
Roller Mouse ADB *(GS)*.....83.
I/O Design
Imageware II Case Black, Navy, Platinum .....45.
ICMS, Inc. MousePen ADB .....89.
Kalmar
Kalmar Roll Top 3.5 *(holds 135)* ....26.
Kalmar Roll Top 3.5 *(holds 45)*.....14.
Kalmar Roll Top 3.5 *(holds 90)*.....21.
Kensington, Inc.
A/B Box .....63.
AntiGlare Filter GS .....34.
Apple Security System.....33.
Mouse Pocket *(Reg. or ADB)* .....8.
Mouseway *(MousePad)* .....8.
Turbo Mouse *(Reg. or ADB)* .....108.
Printer Muffler 80 .....47.
Printer Muffler 80 Stand .....22.
Space Saver Printer Stand .....19.
System Saver *(Platinum or Beige)* ..58.
System Saver GS .....68.
Universal Copy Stand .....22.
Universal Printer Stand.....19.
Koala Technologies
Koala Pad Plus w/Graphics Exhibitor ..79.

Check our low prices. Most of our prices are the lowest in this magazine. If we don't already have the lowest price, WE WILL TRY TO MATCH AND BEAT ANY ADVERTISED PRICE*

*"Advertised price" does not include typographical errors on the part of other vendors or prices that do not reflect higher shipping costs, credit card charges, or membership fees. Final judgement remains with the manager on duty.

Kraft Floppy Disk Notcher .....4.
Kraft Universal 3 Button Joystick *(IIe, IIc)* 29.
Laser Computer Inc.
Laser 128 2 Slot Expansion Box....55.
Lynn Products Cables *(Specify)*.....13.
Lynx Computer Turbo Trackball *(GS)*..59.
Maxell Maxell 3.5 DS, DD *(10)*.....14.
Maxell 5.25 DS/DD .....9.
Mouse Systems
Littlemouse APlus.....78.
Littlemouse ADB .....78.
MousTrak MousePad 7"x9" Size .....8.
MousePad 9"x11" Size .....9.
Northgate Computer Systems
OmniMac Ultra Keyboard *(IIGS)*.....94.

THE ANSI C COMPILER ANSWER
ORCA/C™ with Learn to Program by The Byte Works comes with complete C libraries and extensions for IIgs toolbox. Combines pro power with easy-to-use pull-down menu environment. Beginners learn fast. Source-level debugger saves time. Optimizations enhance speed of programs, compact code. Work in Mac style desktop or UNIX style shell. Disks with sample code.
Suggested Retail $200.00
Programs Plus Price $119

Orange County Speaker
OCS 2-40 *(Stereo Amplifier)*.....125.
RC Systems Double Talk .....183.
Ribbons
ImageWriter Ribbons available in orange, purple, black, blue, brown, green, red, yellow or silver.....3.
ImageWriter II-4 Color Ribbon.....7.
ImageWriter Rainbow Pack *(6 Colors)*.....19.
ImageWriter Ribbon-Black *(6 pack)* 19.
Sony Sony 3.5 DS, DD *(10)* .....12.
Sopris
Imagewriter II Case Navy, Platinum .....42.
Street Electronics
Echo II *(AP & GS)* .....99.
Targus Imagewriter II Case Black ...44.

APPLE COMPATIBLE COMPUTERS

Apple Computer
IIGS Computer 1MG CPU .....799.
Laser Computer Inc.
Laser 128 800K 3.5"Drive w/Controller .....199.
Laser 128 Cables *(Parallel, Serial, RGB or Modem)* ..13.
Laser 128 Computer.....325.
Laser 128 Mouse .....44.
Laser 128 System w/Amber Monitor.....380.
Laser 128 System w/Color Monitor .....490.
Laser 128EX Computer.....369.
Laser 128EX II Computer *(3.5)*....429.
Laser 128EX II Computer *(5.25)* ..399.
Laser RGB Monitor .....215.

BACKUP UTILITIES

Alpha Logic LockSmith v6.0 .....33.
Apple Computer
GS/OS v5.0.2 *(GS)* .....39.
Central Point Software
Copy II Plus v9.0 .....24.

Programs Plus 1-800-832-3201

PROGRAMS PLUS

Fax: 603-433-4217
Inquires: 603-433-6531
Canada: 1-800-832-3201
55 HERITAGE AVENUE
PORTSMOUTH, NH 03801

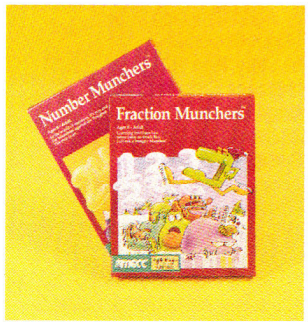
Circle 128 on Reader Service Card.

& Phenomenal Prices

Vitesse, Inc.
Salvation: Deliverance *(GS)* .....29.
Salvation: Exorcisor *(GS)* .....24.
Salvation: Bakkup *(GS)*.....29.
Salvation: Renaissance *(GS)* .....29.
Salvation: Supreme Pack.....119.
Salvation: Wings *(GS)*.....47.

BUSINESS SOFTWARE

Abracadata Everybody's Planner....49.
Actsoft
Alpha Check Plus.....34.
Alpha Check v3.1.....26.
Beagle Brothers
AW v3.0 Companion .....23.
Beagle Bros. Clip Art 1 *(GS)*.....26.
Beagle Bros. Desk Accessories *(GS)*..34.
Beagle Write .....45.
Beagle Write Desk Accessories or Font Pack 1 or 2 .....26.
Beagle Write Font Lib. 1 *(GS)*.....31.
Beagle Write Picture Manager .....25.
Beagle Write *(GS)*.....57.
GS Font Editor or Program Writer...29.
Outliner for Appleworks 3.0 .....41.
Superfonts Activity Guide .....29.
Timeout Decision Pak *(Graph, SpreadTools & SideSpread)* .....85.
Timeout Graph.....49.
Timeout MacroEase.....23.
Timeout Performance Pak *(DeskTools I, II & PowerPack)*.....65.



JOIN THE MUNCHERS FOR A MATH ADVENTURE

With MECC's *Number Munchers* and *Fraction Munchers,* hungry Munchers are out to make a meal of tricky math challenges before *they* become a meal for the mischief-making Troggles. They're counting on your quick thinking and math skills to reach the Muncher Hall of Fame safely. No matter what your age or skill level, *Number Munchers* and *Fraction Munchers* are gobbling-good fun for the entire family.

Suggested Retail $39.95
Programs Plus Price $24

Timeout QuickSpell .....40.
Timeout ReportWriter .....42.
Timeout SideSpread, FileMaster, or DeskTools .....30.
Timeout Style Pak *(SuperFonts, Thesaurus & FileMaster)*.....79.
Timeout SuperFonts .....40.
Timeout SuperForms.....39.
Timeout TextTools.....29.
Timeout Thesaurus, DeskTools II or PowerPack .....29.
Timeout UltraMacros or SpreadTools .....34.
Big Red Software
Labels, Labels, Labels .....22.
Broderbund
Bank Street Writer Plus *(AP or C+)*...47.
Claris
Apple Works v3.0.....168.
Apple Works *(GS)* v1.1 .....192.
Intuit Quicken v1.0 .....37.
Manzanita
BusinessWorks Bundle AP & GS *(Sys. Manager, G/L, A/P, A/R, Inventory)*.....248.
BusinessWorks Payroll *(AP & GS)* ..98.
Meca Software
Managing Your Money v4.0 *(AP & GS)*.....88.
Micca Soft
Invoicer w/A/R & Sales Tracking/Inventory.....125.
Milliken Publishing Medley *(GS)* ...74.
Nolo Press Will Maker v3.0.....33.
Seven Hills Software
Graphicwriter III *(GS)* .....72.
Sierra On-Line Smart Money *(GS)*..45.
Stone Edge
DB Master Professional *(AP & GS)* ..179.
Timeworks, Inc.
Art Portfolio 4 in 1.....69.
Graph It! .....43.
People, Places and Things, Design Ideas .....25.
Publish-It v3.0 *(AP & GS)* .....73.
Swifttax .....45.
Symbols and Slogans, Education Graphics, Font Pack 1 or 2 *(AP & GS)*.....25.
WordPerfect Corp.
WordPerfect *(AP or GS)* .....104.

COMMUNICATION SOFTWARE

Applied Engineering ReadyLink.....57.
Beagle Brothers
Point-to-Point.....58.
TimeOut TeleComm.....41.
Compuserv
Compuserve Membership Kit .....23.
InSync Proterm.....77.
Morgan Davis Group
ModemWorks.....29.

PROGRAMS PLUS

UNDER NEW MANAGEMENT

DEDICATED TO CUSTOMER SERVICE

ProLine .....95.
Softspoken Crossworks.....67.

DISK DRIVES & HARD DISK SUB-SYSTEMS

American Micro Research (Micro Sci)
A.5 Half Height *(II+ & IIE)*.....129.
A.5C Half Height (IIC).....129.
A5 D Half Height 5.25" Drive *(IIGS Daisychain)*.....135.
AMR 800k Drive w/Controller .....215.
AS800k 3.5 Ext. Drive.....168.
GS Partner: Quick 20MB.....515.
GS Partner: Quick 40MB .....585.
GS Partner: Quick 60MB .....665.
Apple Computer
Apple 3.5 Drive *(GS & C+)*.....309.
Apple 3.5 Unidisk.....315.
Apple 5.25 Drive *(IIE, GS, C+)* ....248.
High Speed DMA SCSI Card .....105.
Unidisk 3.5 Controller .....58.
Applied Engineering
AE 3.5" Drive.....199.
AE High Density Drive *(GS)*.....152.
AE 5.25" Drive.....121.
Controller Card for 3.5" Drive *(IIe or II+)* .....62.
Disk][Style Controller Card .....49.
Transdrive 360K Dual Drive .....289.
Transdrive 360K Single Drive .....185.
Transdrive Additional Drive *(for TD single)*.....130.
Vulcan 100 Meg *(AP or GS)*.....1279.
Vulcan 20 Meg *(AP or GS)* .....498.
Vulcan 40 Meg *(AP or GS)* .....639.
CMS Enhancements
20 MB w/SCSI II card.....459.
30 MB w/SCSI II card.....492.
60 MB w/SCSI II card.....569.
CMS 45 Removable w/A2S.....799.
Cartridge for 45 Removable .....99.
SCSI Rom Upgrade .....23.
MC20-Classic, IIsi.....280.
MC40-Classic, IIsi.....370.
MC100-Classic, IIsi.....610.
CV Technologies
Ramfast SCSI Card w/256K Ram ..178.
Laser Computer Inc.
Laser 128 5.25 Disk Drive.....88.
Laser 800KB Drive .....175.
Laser 800KB Drive w/controller ...205.

Programs Plus
1-800-832-3201

PROGRAMS PLUS

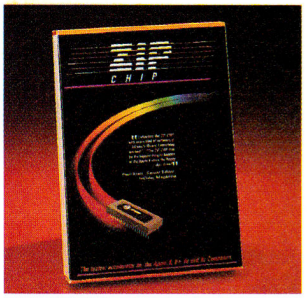
Free Freight – Ask Operators For Details

We Carry A Full Line of

We sell more Apple II Software than anyone else!

Mac LC (has Series II card)
MacClassic 240
Mac II SI • Mac II CI • Mac II FX

CALL



SUPER SPEED UP YOUR IIGS FOR LESS!

Patented model 1600 GSX Board by Zip Technology has super deluxe features for less. *Safe* and *easy* to install, it will speed up all major hardware and software to 8 MHz Plus. Comes standard with 16K memory and is DMA compatible. The GSX is fully upgradeable to 64K of cache memory and 10 MHz with up-grade kit.
Suggested Retail $350.00
Programs Plus Price $239
Also available:
4 MHz .....$98.
8 MHz .....$139.

Universal Disk Controller.....44.

Omnishore
Sider D2 20MB HD.....419.
Sider D4/T 40MB HD.....789.

EDUCATIONAL SOFTWARE

A.E.C.
Spanish Vocabulary or Spanish Grammer.....16.

SPECIAL EDITION PRODUCTS WITH TEACHER'S GUIDES
Return of the Dinosaurs:
Teacher's Edition .....39.
Lab Pack .....68.
Super Lab Pack .....105.
Excel-A-Read:
Teacher's Edition .....39.
Lab Packs .....89.
Spanish or French Vocabulary & Grammar:
Teacher's Pack .....39.
Lab Packs .....74.

AEC Management Systems
Phonics .....31.
U.S. History.....16.
World History .....16.

Activision
Music Studio v2.0 *(GS)*.....43.

Advanced Idea
Audubon Wildlife Adventures: Grizzly Bears *(5.25)*.....32.
Audubon Wildlife Adventures: Whales *(5.25)*.....32.
Audubon Wildlife Adventures: Grizzly Bears*(GS)*.....38.
Audubon Wildlife Adventures: Whales *GS)*.....38.
Stars & Planets *(GS)*.....27.
Wizards of Words.....25.

Barron's
Computer SAT Revised Version .....31.

Britannica
Algebra 1: 1st & 2nd Semester .....46.
Algebra 1: 1st or 2nd Semester.....27.
Designasaurus or Revolution *(3.5)* ..27.
Spellicopter.....22.

Broderbund
Geometry *(3.5)* .....49.
McGee or Katie's Farm *(3.5)* .....25.
Playroom .....24.
Playroom *(MAC)* .....29.
Science Tool Kit Module I or II .....25.
Science Tool Kit Master Module ....49.
Type! .....17.
Where in Europe is Carmen Sandiego? *(AP or C+)* ...27.
Where in the USA is Carmen Sandiego? .....27.
Where in the USA is Carmen Sandiego? *(GS)* .....29.
Where in the World is Carmen Sandiego?.....25.
Where in the World is Carmen Sandiego? *(GS)* .....29.
Where in Time is Carmen Sandiego? *(AP or C+)* ..27.

Computeach
Stepping Stones 1 & 2 .....29.
Studymate-The Grade Booster *(3.5 or 5.25)* .....26.

Davidson & Associates
Alge-Blaster Plus *(AP or GS)* .....28.
Math Blaster Plus *(AP or GS)* or Grammer Gremlins.....28.
Math Blaster Plus *(GS)*.....28.
Read 'N' Roll.....29.
Reading & Me .....25.
Speed Reader II *(Consumer Version)* .....25.
Speed Reader II *(School Version)*...42.
Spell-It Plus *(AP or GS)* or Math Blaster Mystery *(AP or C+)* ..29.
Talking Math & Me *(GS)* or Talking Reading & Me *(GS)*.....28.
Word Attack Plus *(AP or GS)* .....29.
Word Attack Plus Spanish or French .....29.

Fisher Price
I Can Remember or Firehouse Rescue.....9.
Little People Bowling.....9.

Gametek
School Bus Driver or Chutes & Ladders.....9.

Grade Busters Corp.
Grade Busters 1, 2, 3 .....69.

Great Waves Software
Kidstime II *(GS)*.....22.

Learning Company
Magic Spells *(3.5 or 5.25)* or Gertrudes Secrets *(3.5)* .....22.
Math Rabbit *(3.5 or 5.25)* .....22.
Reader Rabbit *(5.25)* .....22.
Talking Reader Rabbit *(3.5)* .....32.
Think Quick *(3.5 or 5.25)* or Writer Rabbit *(3.5 or 5.25)* .....29.
Writing and Publishing Center *(3.5 or 5.25)*.....31.

MECC
Arithmetic Critters *(3.5 or 5.25)* ....22.
Calendar Crafter Home Edition *(3.5)*.....29.
Calendar Crafter School Edition *(3.5)*.....33.
Counting Critters *(3.5 or 5.25)* .....22.
First Letter Fun *(3.5 or 5.25)*.....24.
Fraction Munchers *(3.5 or 5.25)* ...24.
Fun from A to Z *(3.5 or 5.25)* .....24.
Number Munchers or Word Munchers *(3.5 or 5.25)* .....**SPECIAL** 24.
Oregon Trail or Patterns *(3.5 or 5.25)*.....22.
Paint with Words *(5.25)*.....24.
Spellevator *(3.5 or 5.25)* .....24.
USA Geograph *(3.5)* or World Geograph *(3.5)* .....49.

Milliken Publishing
The Story Teller *(GS only)* .....32.

Mindscape Crossword Magic .....33.

Orange Cherry
Addition & Subtraction, ABC's, Speller, Clock or Money .....38.
Animals, Dinosaurs, Numbers, First Writer, First Reader .....38.
Childrens Newspaper Maker *(GS)*...38.
Jungle Safari or Talking First Words *(GS)*.....38.
School Bus, Alpha Chimp, Colors & Shapes, Reading Railroad.....38.
Talking Multiplication & Division *(GS)* .....38.
Talking Speller II *(GS)*.....38.

Queue
Dinosaur Days .....21.
Facemaker Gold Edition .....31.
Kidwriter *(5.25)*.....25.
Kidwriter Gold Edition *(3.5)*.....39.

Sensible Software
Report Card II *(AP & GS)* .....37.
Sensible Grammar *(AP & GS)*.....52.

Simon & Schuster
Typing Tutor IV *(AP or GS)*.....26.

Software Toolworks
Mavis Beacon Typing *(5.25)* .....25.
Mavis Beacon Typing *(3.5)*.....31.

7 POINT POLICY BENEFITS YOU

VISA MasterCard DISCOVER

1. VISA, MASTERCARD or DISCOVER accepted. No surcharge. Your card is not charged until we ship.
2. If we send a partial order, there's no second shipment charge.
3. All shipments insured at no extra charge.
4. No sales tax charged for out of state shipments.
5. COD maximum $1,000, cash or certified check. COD orders ship via UPS Blue Label unless UPS Ground delivers next day.
6. 120-day limited warranty on all products. Defective software replaced immediately. Defective hardware repaired or replaced at our discretion. Prices subject to change without notice. All items subject to availability.
7. Corporate and school purchases accepted, based on credit approval. To submit purchase orders, call our business office at 603-433-6531 or 800-832-3201, 9am-5:30 pm EST. Shipping on corporate and school orders billed at cost.

SHIPPING

- **Continental U.S.** Add $7.00 minimum per order to cover DHL Overnight Service, unless UPS ground delivers next day. Some areas require an additional day. (UPS ground service available at reduced rate per customer request.) Saturday delivery available to many areas upon request.
- **Order by 5:30pm EST Monday-Friday** and all (in-stock items) will ship that evening for overnight delivery, barring system failure, etc.
- **Alaska, Hawaii, outside Continental U.S., APO and FPO:** call (603) 433-6531 or write for shipping information.
- **Mail-in orders** (especially from foreign countries), please furnish telephone or fax number.

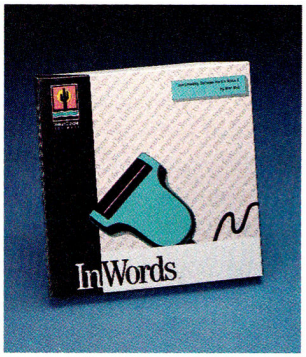
Programs Plus
1-800-832-3201

PROGRAMS PLUS

Fax: 603-433-4217
Inquires: 603-433-6531
Canada: 1-800-832-3201
55 HERITAGE AVENUE
PORTSMOUTH, NH 03801

Circle 128 on Reader Service Card.

Software for Apple & Mac



TEXT SCANNING SOFTWARE
InWords by WestCode is OCR software for the Apple IIe and IIGS. With InWords and a hand-held scanner, you can scan in virtually any printed information - articles, books, contracts, lesson plans, and more - into a file for your word processor, data base, spreadsheet or desktop publishing program. Scans up to 500 words per minute. Requires 512K and Quickie.
Suggested Retail $129
Programs Plus Price $77

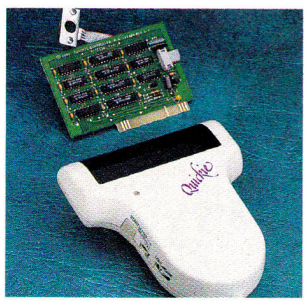
Mavis Beacon Typing *(MAC)* .....32.
Terrapin Logo Plus .....75.
TimeWorks, Inc.
Evelyn Wood: Dynamic Reader.....25.
Weekly Reader
New Talking Alphabet *(3.5)* .....27.
New Talking Opposites *(3.5)* or Sentence Fun *(3.5)* .....27.
New Talking Shapes *(3.5)* or Spelling Rules *(3.5)* .....27.
StickyBear Punctuation *(5.25)*.....27.
StickyBear Vocabulary *(5.25)* .....27.
StickyBear Series: Full Line Available.....CALL

ENTERTAINMENT SOFTWARE

Accolade
4th & Inches *(GS)* or Fastbreak .....27.
Bubble Ghost *(GS)* .....21.
California or European Challenge *(GS)* .....15.
Cycles *(MAC)* .....31.
Grand Prix Circuit *(GS)*.....27.
Ishido *(MAC)* .....34.
Jack Nicklaus 1990 Courses *(GS)* ..15.
Jack Nicklaus Course Disk Vol. 1 or 2 *(GS)* .....15.
Jack Nicklaus Golf *(GS)* .....CALL
Jack Nicklaus Golf *(MAC)* .....CALL
Jack Nicklaus Course Vol. IV *(GS)*.....15.
Jack Nicklaus Course Vol. IV *(MAC)*.....15.
Mean 18 *(GS)*, Hardball *(GS)*, ...27.
Muscle Cars or Supercars *(GS)*.....15.
Serve and Volley *(GS)* .....25.
Stratego *(MAC)*.....31.
Test Drive II *(GS)* .....28.
Test Drive II *(MAC)* .....29.
Third Courier *(GS)* .....30.
Sky Travel *(AP & GS)* .....30.
Artworx
Bridge 6.0 *(AP or GS)* or Strip Poker II *(GS)*.....25.
Kaleidokubes *(GS)* .....14.
BlueLion
Ticket to Hollywood or London .....25.
Ticket to Spain.....25.
Ticket to Washington D.C.....28.
Britannica
Gnarly Golf *(GS)*.....17.
Great Western Shoot-Out *(GS)* .....17.
JigSaw *(GS)* .....23.
Laser Force *(GS)*.....17.
Task Force *(GS)* .....23.
Broderbund
Ancient Art of War .....28.
Ancient Art of War at Sea.....28.
Centauri Alliance or Jam Sessions *(GS)* .....30.
The Dark Heart of Uukrul .....30.
VCR Companion .....30.
Wings of Fury *(AP & GS)* or Prince of Persia .....22.
ByteWorks Ugly Duckling *(GS)* .....25.
California Dreams
Block Out *(GS)*.....26.
Tunnels of Armageddon *(GS)*.....26.
Vegas Gambler *(GS)* .....26.
Casady & Greene
Crystal Quest *(GS)*.....29.
Cinemaware
Star Saga 1 *(AP or GS)* or Star Saga 2 *(GS)* .....32.
Compu-Teach
Once Upon a Time.....26.
Once Upon A Time *(GS)* or Once Upon A Time II *(GS)*.....33.
Puppet Playhouse *(AP, C+ or MAC)*..28.
See the U.S.A. .....26.
Datasoft
Hunt for Red October *(AP or GS)* ...21.
Electronic Arts
Bards Tale *(GS)* .....14.
Bards Tale II.....14.
Bards Tale III or John Madden Football .....31.
Cartooners *(GS)*, Bards Tale II *(GS)* 20.
Earl Weaver Baseball.....14.
Instant Synthesizer *(GS)* .....32.
Marble Madness *(GS)*.....14.
Skate or Die *(GS)* .....14.
The Immortal *(GS)* .....32.
Zany Golf *(GS)*.....26.
FTL
Dungeon Master *(GS)*.....23.
OIDS! *(MAC)* .....25.
GameTek
Double Dare or Press Your Luck .....9.
Infocom
Battle Tech .....19.

■ 24-Hour Fax Line 603-433-4217
■ DHL Overnight Delivery
■ Packing Materials
100% Safe for the Environment

Journey .....19.
ShoGun or Zork Zero .....12.
Interplay
Battle Chess .....27.
Battle Chess *(GS)* or DragonWars *(AP & GS)*.....29.
Neuromancer *(GS)* .....14.
Interstel Empire.....26.
Leisure Genius
Clue, Risk, or Scrabble .....26.
Lucasfilm Games
Maniac Mansion .....15.
Pipe Dream .....17.
Melbourne
Quarterback *(AP or GS)*.....14.
War in Middle Earth *(GS)* .....27.
Micro League Sports
Micro League Baseball w/General Manager & Stats .....24.
Micro Revelations Xenocide *(GS)* ..28.
Microillusions Firepower *(GS)* .....21.
Microprose
F-15 Strike Eagle .....12.
Pirates *(GS)*.....28.
Miles Computing, Inc.
Questmaster .....22.
Questmaster *(GS)*.....26.
Mindscape
Balance of Power 1990 *(GS)*.....32.
Gauntlet *(GS)*.....12.



QUICKIE - FIRST HAND SCANNER FOR YOUR APPLE II COMPUTER BY VITESSE, INC.
Allows you to scan in true grey or B&W, 320/640 mode. Features include Landscape/Portrait Scan, cut/paste, open multiple windows, fat bits edit, resize, rotate, flip, direct print, save to six formats, NDA and MORE! **ONLY** scanner that's Inwords OCR Software compatible.
Suggested Retail .....$299.
Programs Plus Price $191

Hostage *(GS)* or Captain Blood *(GS)* .....26.
New World Computing
Kings Bounty .....26.
Might & Magic .....18.
Might & Magic II.....32.
Origin Systems
Space Rogue, Knights of Legend or Omega *(AP or GS)*.....30.
Times of Lore *(AP & GS)* or WindWalker.....25.
Ultima IV, Ultima V .....37.
Ultima Trilogy (I, II & III).....37.
WindWalker *(GS)*.....25.
Polarware Transylvania 3 *(GS)* .....15.
Ready Soft Space Ace *(GS)* .....33.
Sierra On-Line
Gold Rush *(AP or GS)* or Black Cauldron *(GS)*.....25.
Kings Quest I, II, III or IV .....29.
Kings Quest I, II, III or IV *(GS)*.....29.
Leisure Suit Larry *(AP or GS)*.....25.
ManHunter New York *(AP or GS)* or Police Quest *(AP or GS)*.....29.
Mother Goose *(AP or GS)*.....19.
Space Quest or Space Quest II *(GS)* .....29.
Thexder *(AP or GS)* or Silpheed *(GS)* .....22.
Sir-Tech Software
Wizardry Trilogy *(includes I, II, III)* ..29.
Software Toolworks
Chessmaster 2100 .....26.
Chessmaster 2100 *(GS)* .....31.
Cribbage/Gin King *(GS)*.....25.
Keef the Thief *(GS)*.....14.
Life and Death *(GS)*.....33.
Spectrum Holobyte
Solitaire Royale *(GS)*.....20.
Tetris *(AP & GS)* .....23.
Strategic Simulations
AD&D Champions Krynn or Overrun.....32.
AD&D Pool of Radiance .....30.
Curse of the Azure Bond *(GS)* .....33.
War of Lance.....27.
SSG
Gold of the Americas *(GS)*.....28.
Gold of the Americas *(MAC)*.....32.
Halls of Montezuma *(GS)* .....29.
Halls of Montezuma *(MAC)* .....26.
Panzer Battles *(GS)* .....32.
Panzer Battles *(MAC)* .....32.
Reach for the Stars *(GS)*.....28.
Reach for the Stars *(MAC)*.....32.
Rommel *(MAC)* .....32.
Victory Software
2088: The Cryllan Mission: The Second Scenario.....33.

Programs Plus
1-800-832-3201

PROGRAMS PLUS

Fax: 603-433-4217
Inquires: 603-433-6531
Canada: 1-800-832-3201
55 HERITAGE AVENUE
PORTSMOUTH, NH 03801

HOT STUFF

"Magic powders" can turn your mundane printouts into stunning artwork.

By CYNTHIA E. FIELD, Ph.D.

YOU'LL PROBABLY THINK WE HAD a heavy hand with the holiday eggnog when you learn that this month's desktop-publishing project requires a toaster oven. We do admit to feeling a little giddy about this unique and creative printing technique, because it fits any Apple II — and any Apple II user.

We're talking about *thermography*, a term that literally means writing with heat. (That's where the toaster oven comes in.) No doubt you've seen thermographed greeting cards, letterhead stationery, business cards, and other documents that sport raised printing. With as little as $15 and a handful of everyday household supplies, you can set up a home or school thermography shop. That's all you need to add beautiful finishing touches to anything you design on your Apple II.

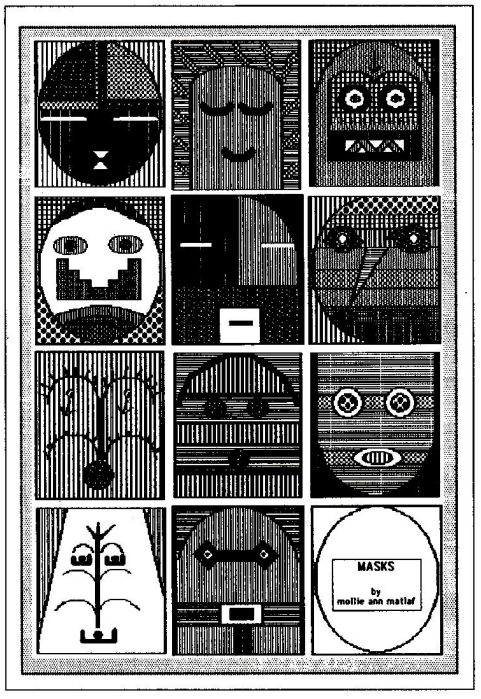


Figure. Thermography sample by Mollie Ann Matlaf. Matlaf creates her designs with various graphics and desktop-publishing programs for the Apple IIe and IIGs.

As you know, we don't have a monopoly on good ideas here in the Press Room. Credit for this project belongs to retired teacher Mollie Ann Matlaf of Oxnard, California. Matlaf also provided the professional-looking sample shown in the accompanying **Figure**.

The step-by-step "Kitchen Thermography" sidebar provides detailed instructions for the raised-printing projects you'll want to do at home, school, or the office. But before you fire up your Apple II, let's consider some fine points.

TAKE A POWDER

In the thermography process, you sprinkle a specially formulated polyamide-resin powder over a fresh computer printout, and the powder adheres to the wet ink. Then you heat the printout, and the plastic powder melts, binding to the ink permanently. The powder tends to rise higher where the ink is dense, but probably not as high as in commercial thermography — the professionals start with a thicker layer of ink.

A dot-matrix printer is best for home thermography projects because its ink is wet, or "tacky," enough to retain the powder. Thermograph printouts from an ink-jet printer don't work well; the ink dries too quickly. You can't thermograph laser printouts such as photocopies either, because the toner is dry. Use a fresh printer ribbon for best results, and, of course, make sure the ink doesn't dry before "powdering" it.

OUR COMPLIMENTS

Faust Thermographic Supply provided us with complimentary samples of its finely milled **NuFlo** thermography powders to test for this column. The company sells an assortment of the powders in quantities as small as 1 pound. Even that amount lasts a long time, because after sprinkling the powder onto your printout, you pour any that doesn't stick back into the container to use again.

A Faust spokesperson told us that you can store the powders indefinitely in their metal cans or in glass jars. The company discourages using plastic storage containers, because plastic resin rubbing against plastic can generate static charges that prevent the powder from sticking to ink.

The company representative also suggested using heat from a bare light bulb, an upturned flatiron, or an electric hotplate, instead of a toaster oven. In fact, an alternative heat source may be better for thermographing documents that are bigger than a toaster oven. Even with an elfin oven, though, you can do the job. Just thermograph one end of a letter-size document, let the paper cool, then thermograph the other end. You don't have to fit the whole document into the oven at once.

You may be surprised to discover that it's not the heated air in the oven that melts the powder — it's the heated paper. Therefore, when you choose your paper you should consider variables such as its thickness and reflectivity. Smooth or shiny stock that reflects heat

doesn't warm up as quickly. Finding the correct temperature setting on your toaster oven is critical; too high and you'll char the paper.

Generate a handful of experimental printouts to determine the right time/temperature combination for your oven. An inexpensive stopwatch or an ordinary wristwatch with a second hand should do the trick. If your oven isn't illuminated, use a penlight to watch the powder melt and its color develop.

ASSORTED PLEASURES

If you can afford it, try an assortment of Faust's NuFlo powders. Use the powders on desktop documents printed with a black ribbon on various types of paper. Nearly all satin-pearl colors produce good results. Brass, copper, and russet powders are among our favorites.

Especially impressive are documents that you thermograph with clear gloss powder, because as the powder melts, it smooths out dot-matrix "jaggies." You can create a thermographed letterhead that someone would swear was typeset. In a similar vein, Matlaf recommends thermographing desktop-published print masters with gloss powder for camera-ready results.

Most thermography powders are initially buff- or cream-colored. Only upon melting does a powder turn its designated color — blue, green, orange, or whatever. Needless to say, you'll want to label storage containers clearly.

TAKE CARE

Faust assures us that the company's NuFlo powders are safe and nontoxic. Nevertheless, you should exercise cau-

THER-MAC-GRAPHY SOFTWARE

Getting "a rise" out of Macintosh documents is just as much fun as thermographing Apple II creations. Just ask retired school audiovisual expert and Mac SE/30 (and Apple IIGS) enthusiast William H. Olson.

Years ago Olson printed wedding announcements for a friend and his fiancée on an old letterpress — the kind for which you set the type by hand. They sprinkled embossing (thermography) powder on the wet ink, and then toasted the announcements over an electric hotplate.

It seems Olson still sets type by hand — except nowadays that means using his hands to tap keys on the Mac keyboard, select text with the mouse, and pull down menus titled Font, Size, and Style. Olson creates much of his modern handiwork with Broderbund Software's **TypeStyler**, a graphics program that provides some three-dozen special text effects, including bending, rotating, and twisting. The accompanying **Figure** shows a thermographed document Olson recently "baked."

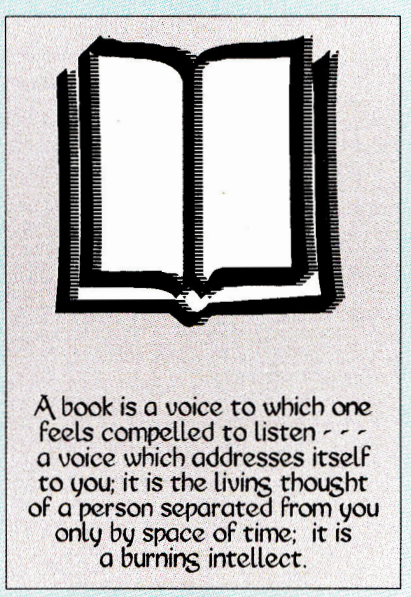


Figure. Thermography sample created by William Olson using TypeStyler with a Mac SE/30.

While we don't claim to be the graphics experts William Olson is, we've experimented with original **MacPaint** designs, including a hypothetical advertisement for an Italian restaurant. Faust's blue-satin pearl powder made the finished piece look great. We were equally pleased with thermographed creations sporting canned clip art from Softdisk Publishing's **DTP Publisher** and The Learning Company's graphics-based writing program, **The Writing Center**.

The list of Macintosh software you can use to design pieces destined for thermography is endless. Among the titles that spring to mind are **Amazing Paint**, **Color MacCheese**, **Easy Color Paint**, **Kid Pix**, **MacDraw II**, **Publish It! Easy**, and even **FileMaker Pro**. **— C.F.**

KITCHEN THERMOGRAPHY

Follow these ten easy steps to enhance your computer printouts:

1. Launch your favorite creativity program, and design the document you want to thermograph. Some of Mollie Matlaf's favorite programs include **AppleWorks 3.0** with **Time-Out SuperFonts**, **Bannermania**, **Davka's Hebrew Graphics**, **8/16 Paint**, **Publish It! 4**, and **The Print Shop**. She also designs original graphics and scans them into her Apple II with a **Quickie** hand-held scanner.

2. Save your design on a data disk and print the document in the best-quality mode your program offers. Avoid overhandling the printout. Thermography powder will stick to oil residue from your fingers.

3. Take the printout a safe distance from your dust-sensitive computer equipment. The kitchen's a good place. (After all, the toaster oven is probably there.) Just be sure to clean up well afterward.

4. Sprinkle thermography powder liberally onto the area of the printout you want to enhance.

5. Shake off excess powder into its storage container. The powder should adhere noticeably to the ink. If there are bare spots, powder them again. Sometimes it helps to let the powder sit for a while. If it still fails to adhere, the ink has probably lost its "tack," and you should try a fresh printout or install a new ribbon in your printer.

6. Inspect the powdered document closely. If you see stray particles, brush them off with a pastry or artist's brush. Errant particles will melt and give your document an undesirably speckled appearance.

7. Heat the toaster oven to a relatively high temperature and leave the door open. (Matlaf sets her oven temperature to just below broil.)

8. Place the powdered document in the oven and leave the door open.

9. "Cook" the document for ten to 20 seconds. (Matlaf usually leaves hers in for 15 seconds.) The time it takes to melt thermography powder depends on oven temperature and paper characteristics.

10. Remove the thermographed document and let it cool. If you want to thermograph additional sections of your document, repeat steps 4 through 10. **— C.F.**

Hard Drive
for IIgs, IIe & Mac
incl. Apple Hi Speed SCSI Card

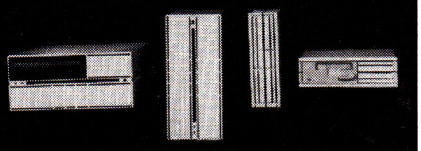
Half Shell -- the hard drive that is 30% smaller than the floppy drive
1.4"x5.5"x7.5"
120MB(19ms) - $589

New **Floptical Drive**
20MB per diskette

A-Hive Jr. -- small size

	7.1"x7.1"x2.2"	
Hard drive	40MB	$439
	105MB	$559
	120MB	$629
	200MB	$849
Tape drive	155MB	$499
A-Hive --	expandable	
	9.9"x9.6"x4.3"	
Hard drive	120MB	$ 649
	426MB	$1559
Cartridge drive	44MB	$ 579
	88MB	$ 889

Hard/tape drives combo
Hard/cartridge drives combo
add $79 for RamFast SCSI card
also Hard Drive for Laser 128



Tulin Corporation
2156H O'Toole Ave.
San Jose, CA 95131
Tel: 408-432-9025
Fax: 408-943-0782

Circle 231 on Reader Service Card.

tion whenever working with particulate matter that you could inhale. In short, when you do home thermography you probably don't need a dust mask, but you do need common sense.

Because thermography requires that you use a hot toaster oven — or other heating device — you must supervise children who want to get in on the fun. You should protect your computer equipment, too: Never use thermography powder near your Apple, printer, or other dust-sensitive device.

GET COOKIN'

The creative possibilities you can enjoy with home thermography are endless, but here are just a few suggestions you might try:

- Use gloss powder on multicolor printouts from your ImageWriter II.
- Try various powders on color printouts made with a red, green, blue, or other single-color ribbon.
- Mix small amounts of selected powders in a metal or glass container (be sure it's clearly labeled) and see what you get.
- You can also create multicolor documents from a black-ink printout by adding one thermography powder to a selected part of the printout and heating it. Then add a second powder to another section, heat that, and so on.

Suffice it to say, anything you can type, draw, paint, or otherwise design on the Apple II in your family room, home office, or classroom can be thermographed in the kitchen — or faculty lounge. Come to think of it, maybe every new Apple II should come with a free toaster oven. ❑

CONTRIBUTING EDITOR CYNTHIA E. FIELD IS A FREE-LANCE JOURNALIST SPECIALIZING IN COMPUTER-RELATED TOPICS. WRITE TO HER AT 60 BORDER DRIVE, WAKEFIELD, RI 02879. ENCLOSE A SELF-ADDRESSED, STAMPED ENVELOPE IF YOU'D LIKE A PERSONAL REPLY.

PRODUCT INFORMATION

Amazing Paint (Mac)
C.E. Software
P.O. Box 65580
West Des Moines, IA 50265
(515) 224-1995
$99.95

AppleWorks 3.0 (Apple II), $249
FileMaker Pro (Mac), $299
MacDraw II (Mac), $199
MacPaint (Mac), $125
Claris Corporation
5201 Patrick Henry Drive
P.O. Box 58168
Santa Clara, CA
95052-8168
(408) 727-8227

Bannermania
(Apple II or Mac), $49.95
Kid Pix (Mac), $49.95
The New Print Shop
(Apple II), $49.95
The Print Shop IIgs
(Apple IIgs), $59.95
TypeStyler (Mac), $199.95
Broderbund Software
17 Paul Drive
San Rafael, CA 94903-2101
(800) 521-6263
(415) 492-3200

Color MacCheese (Mac)
Baseline Publishing
1770 Moriah Woods Blvd.
Suite 14
Memphis, TN 38117
(901) 682-9676
$99.95

DTP Publisher (Mac)
Softdisk Publishing
P.O. Box 30008
Shreveport, LA 71130-0008
(800) 831-2694
(318) 221-8718
$19.95

Easy Color Paint (Mac)
Creative Software
3213 Annandale Road
Durham, NC 27705
(919) 493-9503
$89

8/16 Paint (Apple II)
Baudville Computer Products
5380 52nd Street SE
Grand Rapids, MI 49512
(800) 728-0888
(616) 698-0888
$75

Hebrew Print Shop Graphics (Apple II)
Davka Corporation
845 North Michigan
Chicago, IL 60611
(800) 621-8227
(312) 944-4070
$99/The New Print Shop and Davka Graphics 1, 2, and 3
$59.95/Davka Graphics 1, 2, and 3
$24.95 each/
Davka Ggraphics 1, 2, or 3

NuFlo #114 Thermography Powders
Faust Thermographic Supply
457 East First Avenue
Box 397
Roselle, NJ 07203
(800) 447-2473
(908) 245-8318
permanent gloss, satin pearl, and non-metallic colors, $11.35 to $14.80 per 1-pound can

Publish It! 4 (Apple II), $149.95
Publish It! Easy (Mac), $249.95
Timeworks
625 Academy Drive
Northbrook, IL 60062
(708) 559-1300

Quickie (Apple II)
Vitesse, Inc.
13909 Amar Road
Suite 2A
La Puente, CA 91746
(800) 777-7344
(818) 813-1270
$299

TimeOut SuperFonts
(Apple II)
Beagle Bros, Inc
6215 Ferris Square
Suite 100
San Diego, CA 92121
(800) 345-1750
(619) 452-5502
$69.95

The Writing Center (Mac)
The Learning Company
6493 Kaiser Drive
Fremont, CA 94555
(800) 852-2255
(415) 792-2101
$89.95

5.25" Floppy Drive Also Available

For Mac LC, Apple IIGS, //e, II+, //c & //c+

IIGS High Density arrives.

AE's new 3.5 High Density Drive™ for the IIGS sets a new standard for Apple IIGS storage. 1.6 MEG capacity means you can stop playing diskette roulette. Simply store your large 2-disk application programs on one, high density disk and forget about fumbling for clumsy "sets" of disks. And storing files just became twice as easy too, because you'll only need half the number of disks.

Compatible with all versions of GS/OS, our design incorporates the same, top-quality SONY mechanism that Apple uses. Aesthetically, the AE Drive is every bit as handsome as the Apple Drive. We designed a thick, high-impact plastic case to stack with and exactly match the footprint of Apple's drive. But AE's drive gives you twice the capacity at a far lower price.

Our exclusive 2-way LED indicator shows green for reading, red for writing. Now you can monitor the drive's progress and know that a disk is actually being copied, instead of being confronted with an ambiguous "on" light.

The 800K version of the AE drive works with the IIe, IIc Plus, IIGS, Macs and our PC Transporter. For IIe owners, we've even designed a low-cost optional controller card that allows the IIe to accept data from the 3.5 format. The AE Drive is also Macintosh compatible as an 800K drive. And owners of AE's 800K drive wanting 1.6 MEG high density capacity for their IIGS can affordably upgrade.

High density is quickly becoming the standard for other personal computer platforms. Now you can bring the power and convenience of high density to your IIGS!

Features

- 800K, upgradeable to 1.6 MEG on IIGS
- 2-way LED indicator, red for read, green for write
- Auto eject
- Daisy chain port - works both ways, connect a drive to it, or connect it to another drive
- 1 year warranty
- Apple compatible, works as 800K drive with IIe, IIc Plus, IIGS, Mac and PC Transporter
- Stack and footprint compatible with Apple Drive
- Conserver compatible

AE 3.5 Drive (800K) **$279**
AE 3.5 IIGS High Density Drive (1.6 MEG-GS only)..... **$339**

Order today! To order or for more information, see your dealer or call (214) 241-6060 today, 9 am to 11 pm, 7 days. Or send check or money order to Applied Engineering. MasterCard, VISA and C.O.D. welcome. Texas residents add applicable sales tax.

Applied Engineering®
The Apple enhancement experts.
A Division of AE Research Corporation
(214) 241-6060
P. O. Box 5100
Carrollton, TX 75011
Made IN THE USA

©1990. AE Research, Inc. All rights reserved. Prices subject to change without notice. Brand and product names are registered trademarks of their respective holders

TMS Peripherals

TMS PRO SERIES HARD DRIVES

	*Int.	Ext.
Pro 52 LPS 11ms	$249	$339
Pro 105 LPS 11ms	389	479
Pro 170 10ms	599	689
Pro 210 10ms	729	819
Pro 425 10ms	1299	1389

Full Two Year Warranty on all TMS Hard Drives
***Internal prices for Macintosh only!**

TMS PRO TAPE BACKUP SYSTEMS
TMS Pro T60, $439, includes 1 tape
TMS Pro T155, $499, includes 1 tape
Extra tapes $15.95 & $24.95
Full One Year Warranty on all Tape Systems

TMS REMOVABLE HARD DRIVES
TMS Pro R45, $479 20ms, incls. 1 cart.
TMS Pro R90, $699 20ms, incl. 1 cart.
Extra carts $68.95 & $119.95
Full Two Year Warranty on all TMS Removables

Why Buy TMS?

Pro Series Features
International Auto-Switch Power Supply/2 AC Jacks VCA Mechanism/Selectable Pushbutton SCSI ID Switch 2 SCSI Ports/Shielded Power Supply/All Manuals Shareware: 25 Mbs, Macintosh • 26+ Mbs, GS "Whisper Quiet" Fan/All Necessary Hardware

TMS Peripherals' 30 Day Money Back & Performance Guarantee: *"If you experience a problem with your drive, TMS will ship you a new drive & pick up the suspect drive—at our expense!"*

TMS Peripherals' Full 2 Year Warranty / Toll-Free Tech Support Line: *"If a problem persists after thorough troubleshooting by our courteous, expert technical staff—ship us the suspect drive & we'll send you a replacement unit within 48 hours."*

All Apple drives are preformatted & partitioned & come with the latest System Software & 26+ Mb's of shareware. All Mac drives are preformatted & come with the latest System Software & 25+ Mb's of shareware.

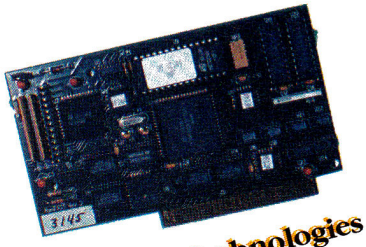
For your convenience, we're open 8am–8pm (EST) Monday–Saturday and all products ship Federal Express.

It's powerful. It's portable. It's fast. It's the peripheral with all the extras—including its own carrying case! It's from a company that has built its reputation on bringing you quality products & excellent service—at great prices. It's from TMS Peripherals.

Shadow
Coming soon...to a desktop near you!

✳ HOLIDAY SPECIAL! ✳ HOLIDAY SPECIAL! ✳ HOLIDAY SPECIAL! ✳

Mix & match 3 or more items (any TMS drive, RamFAST, memory board or Zip GSX) for FANTASTIC Holiday savings! Call today for Special Pricing. *Offer expires December 31, 1991.*
Example: TMS Pro 52 LPS external hard drive + Ram*FAST* Rev. D V2.01 256K + 1 Mb GS Memory Board + ZipGSX 9Mhz/32 Cache = $799—*Regularly $911.85! Save over $100!*

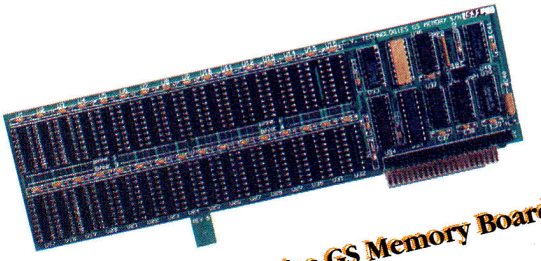


The C.V. Technologies RamFAST SCSI Card

New!!!

This is the SCSI card that is upgradable to 1 Mb of cache. It is also 5 to 8 times faster than the Apple SCSI card under ProDOS 8 and twice as fast under GS/OS. It has an automatic lookahead for unbeaten performance. It has built-in tape backup software that runs in the background. It has a mouse-driven configuration program. It has password protection, of course. By the way, it's also totally System 6.0 compatible and is made by a company known for its continued support of the Apple II market. It's made by C.V. Technologies.

256K Rev. D V2.01 $179.95,
1 Mb Rev. D V2.01 $239.95,
Reconditioned 256K Rev. C ONLY $99.95



The C.V. Technologies GS Memory Board

This is the memory board that is upgradable to 4 Mbs and fully DMA compatible up to 8 Mbs utilizing a piggyback connector that allows you to utilize your current memory board. It's made by a company known for its support of the Apple II market. It's made by C.V. Technologies.

0 Mb $79.95, 1 Mb $142.95, 2 Mb 194.95, 3 Mb $246.95, 4 Mb $299.95

C.V. Technologies

"We make hard drives Ram*FAST!*"

Circle 56 on Reader Service Card.

Seasons Greetings from everyone at TMS Peripherals!

FEDERAL EXPRESS®

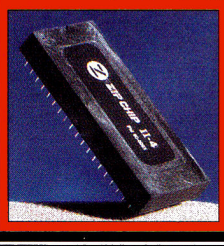
MasterCard VISA AMERICAN EXPRESS DISCOVER

$ **Stretch your dollars!** $
Call about our Price Matching Policy.
Final price matching at TMS' discretion.
$ *All prices subject to change. Some restrictions apply.* $

If you don't see it on these pages, please call. • **C.O.D.'s Welcome—*NO SURCHARGE*** • **P.O.'s by fax or mail**

SERVICE ▶ SUPPORT ▶ SATISFACTION

TECHNOLOGY

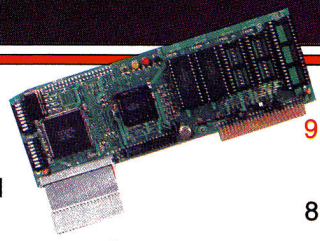


NEW!!!

8 Mhz Zip Chip for your IIe / IIc. Available now! ONLY $148.95

Apple Computer take note:

"This Zip GSX makes a full featured GS word processor faster than several Mac word processors running on a monochrome display." —*Nibble Magazine* Imagine your GS running at a full 7, 8 or even 9 Mhz. Easy to install. ***Compatible with ALL GS hardware and software.***



9 MHz/32K Cache memory, DMA Compatible
***Now only* $248.95**
8 MHz/16K Cache memory, DMA Compatible
***Now only* $198.95**
7 MHz/8K Cache memory, DMA Compatible
***Now only* $148.95**

Full One Year Warranty on all ZIPGSX.

IIGS Products From Seven Hills Software

ShoeBox™ New!!!
Organize all your personal & household information in one easy to find location. Includes FREE Hypercard IIGS ($99 value)! *Requires 1.5 Mbs & hard disk.* **$39.95**

Formulate™ New!!!
A "word processor for math," Formulate can help create & print worksheets, exams & other publications that include formulas & symbols. *Requires 1 Mb* **$32.95**

GraphicWriter III™ New Version!
Superior DTP with word processing, page layout, and graphics in one complete package! *Includes free clip art* & font disks. **1990 inCider/A+ Editors' Choice.** *"Our favorite DTP program for the GS..."* **Dec. '91 inCider/A+** *Requires 768K.* $88.95

SuperConvert™
Convert graphics to super hi-res from Apple IIs, Macintosh, IBM, Atari ST, Amiga, Commodore 64/128, & GIF. Just put the graphic on a IIGS disk and convert it. Change color to B & W or go between 320 & 640 modes. 1 Mb **"...it can convert virtually any type of graphics file to super hi-res."**—*inCider/A+* New Version! $28.95

Font Factory GS™
Resize fonts, create special symbols, improve print quality. Requires 768K. **"...clearly the Cadillac of the field."**—*inCider/A+* $28.95

Express $22.95

ROGER WAGNER

HyperStudio 3.0	**$99**
Clip Art Vol. 1 or Vol. 2, Clip Sounds or Desktop Screen Saver	$19.95
Graphic Exchange or Macromate	$28.95
MouseWrite	$84.95
SoftSwitch	$33.95

The Byte Works Inc.®

ORCA/C or Pascal Compiler	$78.95
ORCA/M 2.0 Assembler	$59.95
Design Master	$48.95
ORCA/Disassembler $28.95 or Talking Tools	$38.95
Learn to Program Bundle	$118.95

MEMORY

256K chips (set of 8)	$18
1 Mb chips (set of 8)	$48

1 Mb SIMMs $38 • 2 Mb $89 • 4 Mb $165

BEAGLE BROS SOFTWARE

PLATINUM PAINT	**$58.95**
GS Desk Accessories	$34.95
Point-to-Point	$58.95
Program Writer, T.O. DeskTools, T.O. SideSpread or T.O. Thesaurus	$30.95
T.O. Graph	$51.95
T.O. SuperFonts, T.O. SuperForms or T.O. TeleComm	$41.95
T.O. UltraMacros	$38.95

Broderbund®

Kid Pix	$35.95
Geometry GS	$53.95
The New Print Shop	$28.95
McGee at the Fun Fair, IIGS	$23.95
Macintosh Version	$26.95
Katie's Farm or McGee, IIGS	$23.95
Macintosh Version	$26.95
Where in (the) World, USA, Europe or Time is Carmen Sandiego? IIGS or Macintosh Version	$28.95
The Playroom, Apple II	$23.95
Macintosh Version	$28.95

Vitesse

SALVATION SUPREME
ALL 5 Salvation IIgs Utilities for $95.95

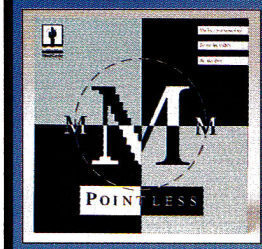
HARMONIE **$31.95**
Printer driver software that unleashes the power of the IIgs for excellent text and graphics printing under GS / OS.

QUICKIE SCANNER **$195.95**
The only hand-held, grey-scale scanner for all "slot equipped" Apple IIs & Laser 128. ***Editor's Choice, inCider, June '90***

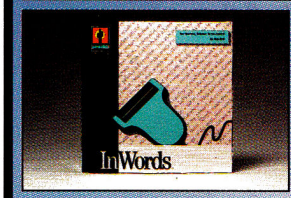
WestCode SOFTWARE

New!!!

TrueType™ Font Technology for the IIGS is here NOW!



POINTLESS **$49.95**
Improve output with most printers—including ImageWriter™ and DeskWriter™. Pointless' INIT/CDEV generates characters at any point size, providing laser-sharp text, transparently from the GS/ OS System Folder. Includes a variety of TrueType fonts. *System 6.0—O.K.*



INWORDS **$78**
Discover the power & ease if InWords™ today. InWords provides a revolutionary new way to enter text into your Apple II, at up to 500 WPM. Requires 512K & Quickie or compatible scanner.

Applied Engineering

Vulcan Gold Upgrade	$45.95
PC Transporter	$248.95
3.5" 800K	$195.95
3.5" 1.6 Mb	$235.95
5.25" Drive / IIe Compatible	$138.95
Conserver	$74.95
Power Supply IIe	$78.95
Power Supply GS	$84.95
TransWarp 32K Upgrade	$79.95
DataLink 2400 Express	$169.95
DL 2400 Express w/ MNP-5	$189.95
DL 2400 Express w/ MNP-5/FAX	$215.95

RamWorks III
256K $129.95 • 512K $149.95 • 1Mb 189.95

800 ASK 4TMS
2 7 5 . 4 8 6 7

1120 Holland Drive, Suite 16 • Boca Raton, Florida 33487 • International 407.998.9960 • FAX: 407.998.9983

Continued from page 29

two strategies for including speech in an Apple IIGS program. You can record words or phrases digitally, then play them back through the GS. (Every GS can handle playback, but you need extra hardware for digital recording. The quality of digitized speech is okay, but it uses lots of memory and disk space.) Or you can use a speech synthesizer such as Talking Tools, which assembles speech from phonemes, the basic units of English speech. (This technique uses much less memory and disk space.)

Talking Tools lets you add speech capabilities to any program in the same familiar tool-set format that characterizes most GS programming. A programmer who uses ORCA/M or APW assembly, ORCA C, or ORCA Pascal can use Talking Tools.

The Talking Tools package has three basic parts. First, there are four new tool sets to add to your GS system disk, which provide male and female voices, a reliable phonetic translator, and an interface to the GS system. Second, a desktop application called *Speak* lets you play with Talking Tools' capabilities. Third, a sample text-screen application called *SpeakIt* shows you how to use Talking Tools in your programs. The manual uses ORCA Pascal to illustrate this sample program; both assembly and C versions of the program are available on disk.

Talking Tools lets the programmer use speech directly from English text or through a special set of phonetic symbols. For both text and phonetics, the programmer can control the pitch, tone, volume, and speed of the spoken material. The best way to learn to control Talking Tools is by playing with the *Speak* desktop application. *Speak* will "say" straight English text and phonetics, provide the phonetic translation of English text, and let you build a dictionary of exceptions to override Talking Tools' best guess of a word's pronunciation. The manual for Talking Tools walks you through *SpeakIt*, a program that illustrates the use of the major features of the tool sets.

Talking Tools does a good job providing speech capabilities in a GS program, but you'll never forget that you're listening to a computer. The male and female voices sound flat, and it's hard to distinguish between Talking Tools' pronunciation of words such as "water" and "otter." Exercising more control over the phonetics and other parameters provided by the tool set does improve speech quality, though. Using an external, amplified speaker as opposed to the GS' internal speaker also helps.

Talking Tools works well with beginning readers. More-discriminating adult ears may have trouble adapting to the rather crude output, though. Developers writing ESL (English as a second language) applications might want to weigh their options carefully before investing money, time, and energy in Talking Tools.

Whatever application you develop, distributing the first three tool sets to other users requires a license from Talking Tools' creators, First Byte. Such licensing is understandable, but will discourage the widespread use of the tools' capabilities.

Byte Works should make Talking Tools' functions available to HyperCard GS programmers. While you can create your own Talking Tools XCMNDs and XFCNS (extended commands and functions) to use with HyperCard, ByteWorks should have offered them as another alternative to the assembly, Pascal, and C interfaces provided.

A BRIDGE TO THE PAST

In the dusty recesses of our computer club's public-domain library lie stacks of untouched Integer BASIC programs. Most club members have never heard of Integer BASIC, the first high-level language available in the days of the Apple II. ORCA Integer BASIC can, with some possible modifications, recompile these old programs to run on the GS. As we'll see, though, the means is more important then the end.

A *compiler* converts statements from a high-level computer language to the machine language your computer understands. The high-level language statements exist as one disk file; the machine-language program is created as a second disk file. The original Integer BASIC, however, was an *interpreted* language: Conversion to machine language took place on the fly whenever you ran the program. This style slowed execution speed, but eliminated the potentially confusing compilation step and gave the beginning programmer more of a feel of "talking" directly to the Apple.

In the ORCA Integer BASIC package you get a language compiler, the source code for the compiler, a program that converts old Integer BASIC programs, and a set of test Integer BASIC programs. To use ORCA Integer BASIC you must have one of the other ORCA development environments; ORCA Pascal and ORCA/M are the most useful. Note that unlike real Integer BASIC, the ORCA version supports the GS' 320-mode graphics. If you choose to use ORCA's desktop development environment, *PRIZM*, low-resolution graphics and 40-column text won't work; you'll have to convert any PEEKs, POKEs, and CALLs you find in old Integer BASIC programs.

It may seem strange, but I spend many a winter night poring over the source code provided with Integer BASIC. (I use AppleWorks and TimeOut TextTools' table-of-contents and index-generation capabilities to print it.) I ran a couple of Integer programs through the converter, just to make sure they worked, but found myself more interested in tearing apart the compiler. ORCA Integer BASIC is a fun tool for studying the inner workings of a compiler's design. Using the sample disks included, you can follow the way the compiler handles programming situations. Once you understand what the compiler is doing, you can dream up modifications and customized jobs.

The highlight of this package is the manual. It includes an excellent discussion of computer-language grammars and the four important components of most language compilers (scanner, parser, semantic analyzer, and code generator), as well as an appendix describing how to port over old Integer BASIC programs. The main body of the text is a detailed account of the compiler's inner workings and how you can customize them. The documentation's delightful tone comes from Mike Westerfield, author of ORCA Integer BASIC and a VIP in the GS programming community. His voice is passionate and somewhat opinionated, but he's a teacher you remember and from whom you learn a great deal.

Most people don't have the time or the inclination to take a university-level course in compiler design, but ORCA Integer BASIC provides an easy and interesting introduction to compiler fundamentals. If you're an amateur programmer, you'll find ORCA Integer BASIC fun and rewarding. ❑

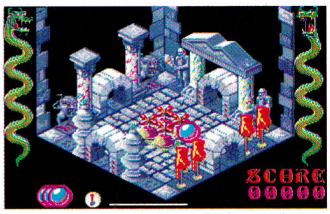
Ron Berntson
Saskatoon, Saskatchewan, Canada

Exclusive Source for the Best IIGS Programs

Strategy Game 3-Pack

Strategy 3-Pack: Get 3 great programs for the price of just 1. **Shanghai** by Activision allows you to play Mah Jongg. **Chessmaster 2100** by Software Toolworks is the premier chess program for the Apple IIGS. **Blackjack Academy** by MicroIllusions will teach you the strategy behind this card game. To get all 3, **Order product number BR51 for only $46.**

Fun & Games 3-Pack



Fun & Games 3-Pack: Airball by Michtron is a blast. You need to maneuver a balloon through a maze of spikes and other sharp objects. **GBA Basketball** by Activision lets you take the court in two-on-two action. **Fire Power** by MicroIllusions is a tank battle game in which the object is to capture the other player's flag. To get all 3, **Order product number BR52 for only $44.**

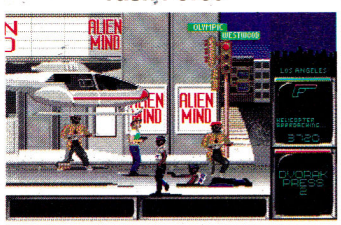
Adventure Game 3-Pack

Adventure 3-Pack: The Last Ninja by Activision is an action adventure, in which you must use your martial arts skills to defeat foes. In **Hacker II** by Activision, you must penetrate the Russian security system by remote control to retrieve secret documents. **Beyond Zork** by Infocom is a classic text adventure. **Order product number BR53 for only $44.**

The Immortal™

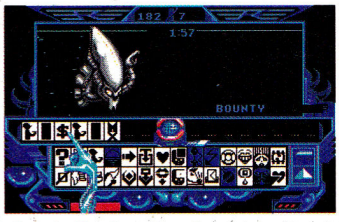
The Immortal™: One of the best ever written for the Apple IIGS. Venture into the dungeon and unravel the mysteries of the levels below. Animated monsters fight in real time against trolls and goblins, see the blood spray off the edge of your sword and hear the last groan of your enemy. **Order product number EA82 for only $30.**

Task Force™



Task Force™: Your mission is to clean up the streets in L.A., Chicago, Washington, San Francisco and New York. Starting with a pistol you end up with flame throwers, missile launchers, grenades—all the latest stuff. The graphic detail and fluid animation is amazing. The hottest action ever for the IIGS. Simultaneous 2-player mode. **Order product number DW56 for only $25.**

Captain Blood™



Captain Blood™: Five clones are scattered throughout the galaxy, draining your life force. You must find and assimilate them before the ship's auto-bionic functions take over completely. Death-defying flights through Hyperspace and dangerous terrain lead to strange worlds with alien inhabitants like the beguiling Torka. **Order product number MP53 for only $20.**

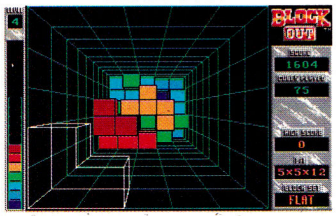
Music Studio™ 3-Pack

Music Studio™ 3 -Pack: The premier music composition program, **Music Studio 2.0**, allows the user to compose, arrange and play their favorite music. Real time Midi input. Design your own instruments! Also included in the pack are additional Instrument and Song Disks for Music Studio. **Order product number BR54 for only $39.**

Paintworks Gold™ 3-Pack

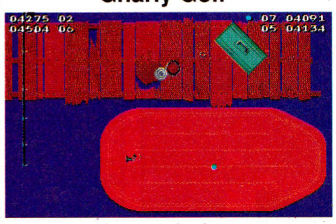
PaintWorks Gold™ 3 -Pack: We've combined **PaintWorks Gold**, the classic paint program for the Apple IIGS, with a disk full of multi-color clip art and Big Red's Graphic and Picture Converter for the Apple IIGS. Everything that you need to start creating your own masterpieces is included. Works in both the 320 and 640 modes. **Order product number BR55 for only $39.**

Block Out™



Block Out™: It's like Tetris™ but it's 3-dimensional. Your job is to rotate and maneuver various 3-D blocks as they fall into a pit. The idea is to make the blocks fall into the proper position to form complete layers. As each layer is completed, it vanishes, giving you more room to work with. This game is definitely addicting and it gets our top rating! **CD54 is only $20.**

Gnarly Golf™

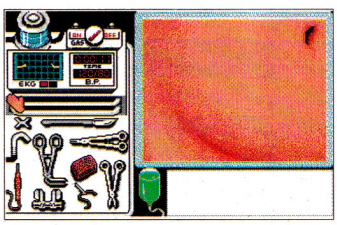


Gnarly Golf™: Miniature golf at its finest and its wackiest. This is the raddest and baddest, hottest and coolest way to sink a golf ball. There are 18 totally outrageous ways to fall in a hole and each hole is a game in itself. With silly graphics and sneaky on-screen hints, Gnarly Golf will keep you laughing for a totally outrageous amount of time. **Product number DW54 is only $9.**

Tunnels of Armegeddon™

Tunnels of Armegeddon™: An arcade game by California Dreams that will leave you dizzy. Feel the G-Forces as you navigate through the tunnels. Use your blaster to clear out whatever gets in your way. Lavish detail. Great action. Unbelievable feeling of warp speed motion. A+/Incider gave it a 9 out of 10 rating! **Order product number CD53 for only $20.**

Life &Death™



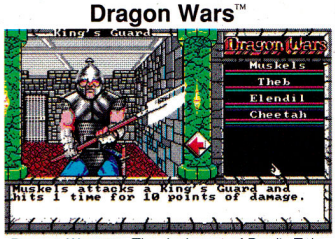
Life & Death™: You are the Surgeon! You make the diagnosis, then perform the needed surgery. The patient's life is in your hands as you perform an appendectomy. First, incise the patient's abdomen using the McBurney technique. Retract the peritoneum and you're ready to remove the appendix. Not for the faint of heart. **Order product number SF52 for only $20.**

Free Shipping to U.S. and Canada
Fast Service. Order by Fax (402) 379-3361
MasterCard or Visa Accepted

Prices quoted in this ad are for non-members of the Big Red Computer Club. Member prices are even cheaper! Member prices are from $2 to $10 less per title. You can become a member for only $19.95 and save Big Bucks. Plus you'll receive twelve issues of our great newsletter called Scarlett. School purchase orders accepted.

Big Red
COMPUTER CLUB
423 Norfolk Avenue, Norfolk, NE 68701

Dragon Wars™



Dragon Wars™: The designers of Bard's Tale, Wasteland and Battle Chess have pooled their talents to create the ultimate role-playing fantasy. Sailing across uncharted seas, you and your party are in search of a legendary paradise called Dilmun. But instead you've been imprisoned and magic is your only salvation. **Product number IF57 is only $30.**

Other Great Apple IIGS Programs

Only $5 to $30 per program

Balance of Power 1990	$20	Instant Synthesizer	$20
Bard's Tale I	$20	Jigsaw!	$15
Bard's Tale II	$20	Keef the Thief	$20
Bubble Ghost	$15	Laser Force	$15
Club Backgammon	$10	Mavis Beacon Teaches Typing	$20
Crystal Quest	$20	Mean 18 Golf	$30
Deja Vu: Nightmare Comes True	$15	Neuromancer	$15
Deja Vu II: Lost in Las Vegas	$15	Serve and Volley	$20
Deluxe Paint II	$15	Shadowgate	$15
Gin King/Cribbage King	$20	Skate or Die	$15
Grand Prix Circuit	$24	Triango	$10
Great Western Shootout	$15	Vegas Craps	$15
Instant Music	$15	Vegas Gambler	$15

For Free Catalog and To Order - Call Now! - (402) 379-4680

Circle 151 on Reader Service Card.

Continued from page 80

A	B	C	D	E
F	G	H	I	J
K	L	M	N	O
P	R	S	T	U
V	W	X	Y	Z

Figure 3. Starting arrangement of letters in word game.

time (and in which time zone) will the two trains meet?

Using Math Connections, students can represent each train by an equation and then explore the problem in various ways, developing and testing strategies. They can even use the equation's output to move pictures of the trains across the screen. By playing with the general form of problems such as this, students are better prepared to solve math problems in "real life" later on.

In my opinion, programs that provide context-free drill should be banned. There are enough real math problems around to provide all the practice any child could need. Unless we insist that the software industry give us better products, however, we won't get them.

I saw a program recently in which players increased the speed of on-screen race cars by doing context-free computations quickly. Now it seems to me that if your goal is to have students perform computations, and you think race cars are a good gimmick, there are tons of relevant ways to connect the two. For example, fuel is heavy and slows down a car, so you want to carry just enough to finish the race; you can calculate the necessary amount from the fuel efficiency of the car and the length of the race. At a more advanced level, you can also account for decreased efficiency with increased speed, multiple refueling stops, and other factors. It would be just as easy to write a program involving these concepts as the one involving mere calculation.

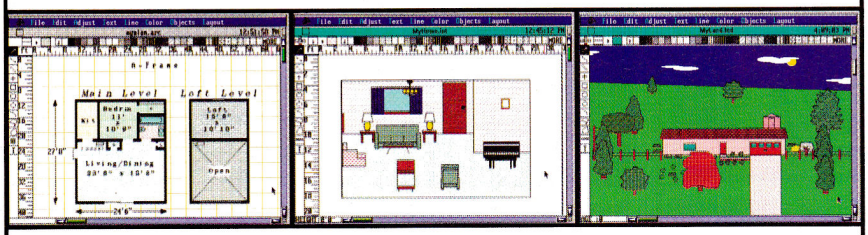
If you want to give kids a challenging math (and English) problem — one for which they might write their own computer program — entice them with this puzzle: *Arrange the letters A through Z (without Q) in a 5-by-5 grid.* (See **Figure 3**.) Then build words by moving left, right, up, down, and diagonally through the grid, one letter at a time. Find the words *STUN*, *STUNT*, and *STUNTS*, for example. You can use letters over again, but not in sequence; in other words, double letters aren't allowed.

The first challenge is to find as many words as possible in this grid. (Stop at 50 only if you must.) Notice that you don't use some letters at all, because the vowels aren't conveniently placed. So the next challenge is to rearrange the 25 letters to yield the largest number of words. What strategies would you use to place the letters? How would you test your arrangement? How would you know if it were optimal? I'm working on a public-domain Apple II program to facilitate solutions to this problem; look for it here in a future Learning Curve column.

Problems like this are neat because they involve a lot of math, they can be approached by children of all ages, and they're engrossing. If such problems were challenging our kids every day, our nation's math worries would be over. ❑

WRITE TO DAVID THORNBURG AT 1561 LAUREL, SUITE A, SAN CARLOS, CA 94070. ENCLOSE A SELF-ADDRESSED, STAMPED ENVELOPE IF YOU'D LIKE A PERSONAL REPLY. DR. THORNBURG'S MATH BOOK, *CHAOTIC MICROWORLDS*, BUILDS ON IDEAS HE'S SHARED IN THESE PAGES, AND COMES WITH A DISK OF CHAOS PROGRAMS AND A BOOK OF PROJECTS FOR FURTHER EXPLORATION. TO RECEIVE THIS PACKAGE, SEND $10 TO DR. THORNBURG, ATTENTION MICROWORLDS, AT THE ADDRESS ABOVE. BE SURE TO SPECIFY 3.5- OR 5.25-INCH DISK FORMAT.

DESIGN YOUR OWN HOME™



ARCHITECTURE
Draw floor plans and structural details—prints plans to scale.

INTERIORS
Draw room plans, arrange furniture and explore color schemes. Great for kitchen & bath design!

LANDSCAPE
Create complete landscape plans, age plants to determine correct placement, and prepare shopping list for your trip to the nursery.

Orders placed with Abracadata before 12/31/91 receive our gift of one FREE library of 48 pre-drawn plans per program.

...I love programs [Architecture] that give you 90% of the job for 2% of the cost.
–Macintosh Construction Forum

Retail Price Per Program

Apple II/Laser 128, 64K.	$69.95
Apple IIGS, 1MB.	$89.95
IBM, 640K.	$99.95
Macintosh, 1MB.	$99.95

To order or receive a FREE Color Catalogue:
CALL 1-800-451-4871
FAX (503) 683-1925

Abracadata
the source of plan-making software
SINCE 1985

To order by mail: Add $7 shipping first program plus $2 each additional. Send VISA/MC # (with exp. date) or check to Abracadata, Ltd., P.O. Box 2440, Eugene, OR 97402

Circle 40 on Reader Service Card.

We Buy Unwanted Surplus Items

ALLTECH ELECTRONICS CO.

We Support The Apple II!!

APPLE][FOREVER! • THE POWER][BE YOUR BEST®

Apple Service Parts • Apple Chips & ROMs • RAM • SIMMs • Hard Disks • Peripheral Cards

Accessories

Accelerators

Zip GS 7Mhz/8k cache $149
Zip Chip //e & //c 8Mhz.....$139

Peripheral Cards

5.25" Disk Controller (19 Pin).....$45.
5.25" Disk Controller (20 Pin).....$39.
Graphic Parallel Printer Card .....$45.
Super Serial Card .....$52.
][+ 80 Column Card.....$45.
Mountain CPS Card (II+).....$45.
No Slot Clock .....$23.

Cables & Switch Boxes

Common Apple Cables.....$12-. $15.
Laser 128 Parallel Cable.....$15.
Disk][to //c,19 Pin Convter.....$14.
IIe,//c,IIgs to ImageWriter I/II....$12.

A/B Switch Boxes $19.00
A/B/C Switch Boxes $29.00

RAM Chips & SIMMs

Expanding your Apple IIGS Memory Expansion Card, Æ RAMWorks or Super Expander & compatibles.
41256.....$1.50 ea.
768K Expansion Set for GS.....$32.
Expanding your RAMPak 4GS Or Æ GS Ram Ultra
44256 $6.00 ea, ..bank..... .....$48.
Expanding yout GS Juice Plus, Æ GS Ram Plus, Chinook 4000, CV Tech or other like card
41024 (1 Meg) $6.00 ea. Bank.....$48.
Expanding you OctoRam or GS Sauce
1024K SIMM .....$42.
SRAMs (For printer buffers & Cache)
6264(8k)-15 .....$6.00
62256-70 .....$12.00

Monitors

Apple Monitor /// (Refurb) .....$65.
Apple Monitor][(Refurb) .....$65.
Composite Green (New).....$69.
Color Composite (Not for 80 Col) $79.
Comp. Green/Amber (Refurb).....$35.

Blank Media

5.25" DSDD Disks.....100 for .$19.
5.25" DSDD Disks.SAVE!.500 for..$89.
3.5" DSDD Disks.....50 for ..$20.
3.5" DS (High Density) ....10 for..$8.50
Cleaning Disk 5.25/3.5.....$1/ $2.50

Closeouts & Specials

System Saver //e or IIgs .....$45.
Dresselhaus **C-Print!** • Use an Epson RX/FX-80 with //c.....$49.
MicroBuffer II+ (Practical).....$49.
Serial Grappler BufferPak .....$19.
Digital Diary (II+,//e) .....$14.
//c Type Carry Case.....$29.
Joystick or Paddles.....$9.95
1200 Baud External Modem .....$39.
300 Baud Internal Modem.....$29.

School & University Purchase Orders Accepted!
We stock many older and hard to find items.

HARD DISK SUBSYSTEMS

20 Meg SCSI.....$229.00 40 Meg SCSI $275.00
80 Meg SCSI.....$435.00 100 Meg SCSI $495.00
130 Meg SCSI.....$539.00 200 Meg SCSI $795.00
SCSI Case & Power Supply for 3.5" Drive.....$69.00

All SCSI Drive prices are without SCSI Card, add $39.00 for a CMS SCSI II, $109 for an Apple High Speed SCSI Card or $169.00 for a RAMFast SCSI Card.

FLOPPY DISK DRIVES

5.25" Full Hieght.....20 Pin....$65.00.....DB-19..$75.00
Apple Disk][(Refurbished).....$75.00....w/DB19..$85.00
//c Intnl Assembly $89.00 **Disk][--> DB19 Cable.$14.00**
DuoDisk 5.25" Exch.$129.00 DuoDisk No Exch....$169.00
Apple 800K Exch .....$135.00 Apple FDHD Exch ..$249.00

Apple //c, IIGS & Laser 128 Need DB-19 Type Drives

IIGS RAM EXPANSION

GS Juice Plus & GS Sauce

GS Juice + w/1024K..$99.00 GS juice+ w/2048K .$139.00
GS Juice+ w/4096K.$199.00 1 Meg Bank Set $48.00
GS Sauce w/1024K..$109.00 GS Sauce w/2048K .$151.00
GS Sauce w/4096K..$239.00 1 Meg SIMM.....$42.00

Great Deals on RAM and Expansion!!!

Orders & Information: **619/721-7733**
Fax Orders, P.O.'s: **619/721-2823**
Alltech Electronics Co., Inc.
602 Garrison St.
Oceanside, CA 92054
Hours: 10-7PM Mon-Fri, 10-5PM Sat

...and the fine print:
- CA Residents please add 8.25% Sales tax.
- Minimun shipping & handling charges $5.00. (This covers most orders) Extra For Second Day, Next Day & Federal Express
- Warranty: Products designated by a "*" have a 90 day warranty, all others have 1 yr. from date of purchase.
- ALL Returns must have an RMA #, call before shipping back to us.
- S&H Charges are non-refundable
- Keyboards, power supplies, print heads & service parts may be subject to exchange only.
- Some RAM chips may be new but pulled. All RAM chips have a 1 year warranty.
- 20% Restocking charge, applies to products purchased in error & incompatiblity problems. Please be sure what computer you have when placing an order.
- School & University Purchase Orders accepted, others on AOC only.
- C.O.D. Orders are Cash or Cashiers Check.
- Personal Checks require 7-10 days to clear Before orders are shipped.
- Prices and availability subject to change at anytime without any notification whatsoever.

][+, //e & //c RAM Expasion

16K Language Card (][+).....$17.
Extended 80 Col Card .....$27.
Super Expander //e 1024K.....$109.
Super Expander //c 1024K.....$119.
Super Expander][+ 1024K .....$119.

Service Parts

Apple //e Specific Chips

MMU or IOU 342-0010/0020 .....$29.
CD/EF ROM 342-0134/0135.....$19.
6502 (CPU, Unenhanced).....$3.
65C02 (CPU, Enhanced).....$9.
Video ROM 342-0133/0265 .....$19.
HAL 342-0170.....$19.
Keyboard Map 342-0132 .....$19.
AY3600 Pro (Kybd Encoder).....$29.

Apple //c Specific Chips

MMU or IOU 342-0011/0021 .....$29.
Mon ROM 342-0272..(no 3.5") .....$19.
ROM, 3.5" Upgrade 344-0033 .....$29.
65C02 (CPU, Enhanced).....$9.
Video ROM 342-0265 .....$19.
GLU or TMG 342-0170 .....$19.
Keyboard Map 342-0132 .....$19.
AY3600 Pro (Kybd Encoder).....$29.
IWM 341-0041 (Drive Port) .....$29.

Apple][+ Specific Chips

F8,F0,D8,D0,C8 Roms.....$7 .ea.
6502 (CPU, Unenhanced).....$3.
8T97,7559,8304.....$9.

Apple IIgs Specific Chips

ROM 01 Upgrade 342-0077B.....$29.
VGC Upgrade..344S0046 (ASIC) ..$29

Keyboards

//e or //c Exchange Only.....$65.
][+ or Mac 128/512 .....$35.
][+ Keyboard Encoder.....$14.

Power Supplies

][+ or //e P/S $45 w/exch.....$35.
IIGS P/S .....$69.00 w/exch.....$59.
//c External..$39... Internal.....$29.
Macintosh 512/Plus Exchange...$149.
Modem 300/1200 Power Supply..$7.

Motherboards

//e or //c MLB $169.....w/exch.$139.
][+ MLB w64K.....$49.

Printer Heads

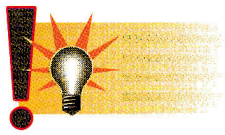
ImageWriter I, C-Itoh, Apple DMP NEC 2200....w/exchange. .....$59.
ImageWriter II exchange only .....$89.
Some Epson heads Available.....Call
Other ImageWriter I/II Parts.....Call

Apple Cases

//e or //c.....$45.
][+ or Mac 128/512 .....$29.

Refurbished Printers

ImageWriter I / II.....$199. / $299.
ImageWriter I Wide Carrage.....$250.
C-Itoh Prowriter Jr (Serial) .....$79.
Various 9 Pin Paralell Printers.....$95.



HINTS

COUNT ON US

A definition here, a shortcut there — our information swap can help you stay one step ahead of frustration.

Edited by THE STAFF OF INCIDER/A+

ENHANCED DB FILE CREATOR

Who said that if you're writing macros you aren't programming? This month we'll introduce a *counter*, a device no programmer can live without. Counters save numerous keystrokes and bytes of space. It's a numeric variable that's defined, then incremented or decremented progressively until it reaches a certain value and completes the process. Using a counter, you can repeat a function a desired number of times, without having to type it in over and over again. Also, if the number of times you repeat a function changes, you can alter your counter variable easily via user input to reflect any situation.

Here's an enhancement of the database file-creator macro in "Fast File Creation" (October 1991, p. 64). The accompanying **Figure** automates some of the category features you did by hand. I chose "c" as the variable to hold the count. The DB macro demonstrates both progressions — the first decrements from the desired number to zero; the second increments from 1 to the desired number. Either design works. (I used both merely for illustration purposes.)

Although you may not use all 30 categories provided for in this macro, including them requires little extra memory — single dots use a small amount of screen space. You can move them via the *Layout* command to the far right or the bottom of the single-record-layout screen. Then, if you ever create a new category, you can simply change the dot to a name, and you won't lose your report formats.

Note that AppleWorks 2.x users must delete the <*display #off*> and <*display #on*> commands, and must suffer the flashing screens — or, upgrade to 3.0!

```
start
#:<all><                    { Create New DB File From Anywhere}
display #off:               { freeze screen display to hide activity}
oa-Q esc:                   { get straight to the Main Menu}
rtn>4<rtn rtn>LIST<:        {create a new DB file from scratch}
display #on rtn:            { restore screen activity}
oa-Y:                       { prepare to enter category names}
c = 30:                     { set counter for 30 categories}
begin>.<rtn:                { begin "create categories" loop}
                            { enter dot to create each category}
c = c - 1:                  { decrement counter for next cat name}
if c > 0 rpt else:          { continue loop until 30 cats are done}
c = 1:                      { reset counter for "return loop"}
begin up:                   { begin "cursor return" loop}
c = c + 1:                  { increment counter for next position}
if c < 30 rpt elseoff:      { continue loop until in first position}
insert oa-E:                { force overstrike cursor on}
msg ' Enter Category Names as you wish. Press <ESC> when finished.':
                            { display message prompt for user}
                            { ESC key established as the "done" key}
begin:                      { begin "name that category" loop}
k = key:                    { capture keypress in variable "k"}
if k = 27:                  { if ESC key ("done") is pressed...}
msg "" : esc:               { erase msg prompt and end name routine}
else print chr$ k : rpt>!   { otherwise, enter text key pressed}
```

Figure. Enhancement for database file-creator macro.

— Will Nelkin
1675 Grand Avenue
San Rafael, CA 94901

THE UNKNOWN PARAMETER

ProDOS manuals babble on and on about using slot (S), drive (D), and even volume (V) parameters with CAT, but nowhere will you find mention of *T* or *file type*. By adding this parameter to a CAT or CATALOG command, you can specify the files you want to list.

For instance, CAT ,T$FC lists all files of type BAS on a volume. If you've got a hard drive with tons of files, what better way to see your Applesoft BASIC programs at a glance? You can specify any file type as long as you know the proper hexadecimal code. Check the accompanying **Table** for codes for the most common types.

Because you can use this parameter in either immediate or deferred execution, it makes a great tool for home-brew file-selection routines. Also, if you use a file type that doesn't exist on a volume, ProDOS will return the number of blocks free and used — a quick way to tell how full your disk is. For more detailed information, pick up a copy of the *ProDOS 8 Technical Reference Manual* (Addison-Wesley's Trade Computer Books Division, Jacob Way, Reading, MA 01867, 617-944-3700, $29.95). ❑

File Type	Hexadecimal
BIN	$06
TXT	$04
DIR	$0F
AppleWorks database file	$19
AppleWorks word-processor file	$1A
AppleWorks spreadsheet file	$1B
INT	$FA
BAS	$FC
SYS	$FF

Table. Proper codes for file types.

— Stephen Cerruti/
Cameron Crotty
c/o inCider/A+
80 Elm Street
Peterborough, NH 03458

Now you see 'em,

Now you don't.

You've seen them before, those unsightly "jaggies" that make your text look a little rough around the edges.

Well, it's time to clear things up. Introducing *Pointless,*™ a new font technology for the Apple IIGS.

With Pointless, letters displayed on the screen appear smooth, crisp and clear at even the largest point sizes.

What's more, Pointless improves printed output with almost any kind of printer, including the ImageWriter® and DeskJet,™ providing impressive laser-sharp text.

To make all this possible, Pointless uses TrueType™ outline fonts, the new font standard on the Macintosh and Windows. Now GS users can share the benefits of this new font technology.

A snap to install, Pointless works transparently with any GS program, including favorites like AppleWorks GS,® HyperStudio,™ Platinum Paint,™ and GraphicWriter III.™

Simply pull-down the Font menu and your TrueType fonts show up along with your other GS fonts. But unlike regular GS fonts, Pointless will instantly create any point size you need from a single TrueType font.

To help you design great-looking pages immediately, a variety of popular TrueType fonts are included with Pointless. And, to add even more style to your projects, pick up one of WestCode's Type Collections. Each library of fonts contains several outstanding typefaces.

Now that you've seen what Pointless™ can do, wouldn't it be pointless to use your GS without it?

Look for Pointless at your favorite software dealer. Only $69.95. Or call us at 619-679-9200.

WestCode SOFTWARE

This ad's headline was created using Pointless™ (excluding the first line) and printed with a DeskJet.

Pointless requires an Apple IIGS with GS/OS 5.0 or later. Appropriate printer drivers required. Network/School Site licenses available. All brand and product names are trademarks of their respective companies, and you know who they are. *© 1991 WestCode Software,* *11835 Carmel Mountain Road, Suite 1304, San Diego, California 92128 (619) 679-9200 • Fax (619) 451-0276.*

Circle 61 on Reader Service Card.

1991 INDEX

FEATURE INDEX

alphabetical by author

BUSINESS/FINANCE

AUTHOR	TITLE	ISSUE	PAGE
Crotty	A New Approach to Personal Finance	Mar	66
Field	Free Enterprise	Nov	62

CONNECTIVITY/NETWORKING

AUTHOR	TITLE	ISSUE	PAGE
Keizer	In the Network Groove	Sep	40
Markowitz	Apple II to Mac and Back	Mar	77

DESKTOP PUBLISHING

AUTHOR	TITLE	ISSUE	PAGE
Dubrovin	Kid Power: Projects for Young Publishers	July	44
Field	Sneak Preview: The Write Stuff/DTP Panache	July	36

EDUCATION

AUTHOR	TITLE	ISSUE	PAGE
Dubrovin	Kid Power: Projects for Young Publishers	July	44
Holzberg	The Lighter Side of Education	Sep	34
Holzberg	CD-ROM Comes of Age	May	44
Holzberg	Sound and Image: The World on a Disc	Nov	30
Keizer	Hyperclass: Interactive Multimedia Revolutionizes Education	May	34
Kohn	Breaking Down Barriers	Oct	40

GRAPHICS

AUTHOR	TITLE	ISSUE	PAGE
Field	The Electronic Palette	Aug	32
Field	CAD for All Reasons	Oct	32
Greh	Graphics Gallery 3: Artist, Inspire Thyself	Jan	70
Greh	Graphics Gallery 4: Vive la Différence	May	62
Greh	Graphics Gallery 5: Capture the Moment	July	56
Greh	Graphics Gallery 6: Is It Art Yet?	Sep	46
Legue	Print Shop Graphics: A Triple Threat	Mar	85

HARDWARE/PERIPHERALS

AUTHOR	TITLE	ISSUE	PAGE
Holzberg	On the Other Hand: Five Affordable Mac Scanners	Jan	55
Holzberg	CD-ROM Comes of Age	May	44
Holzberg	Sound and Image: The World on a Disc	Nov	30
Keizer	LC vs. GS: Side by Side, Head to Head	June	22
Kohn	Scanners Head to Head	Jan	44
Morrison/ Archer	Hard-Disk Drives Made Easy 1: Shopping for a System	Jan	61
Morrison/ Archer	Hard-Disk Drives Made Easy 2: The SCSI Side of Life	Feb	47
Morrison/ Archer	Hard-Disk Drives Made Easy 3: Off the Beaten Track	Mar	88
Morrison/ Archer	Hard-Disk Drives Made Easy 4: The Wizard of OS	Apr	53
Morrison/ Archer	Hard-Disk Drives Made Easy 5: It Pays to Be Organized	May	57
Morrison/ Archer	Hard-Disk Drives Made Easy 6: Surviving the Crash	June	42
Statt	Integration for a New Generation	Nov	24

HYPERMEDIA/MULTIMEDIA

AUTHOR	TITLE	ISSUE	PAGE
Holzberg	CD-ROM Comes of Age	May	44
Holzberg	Sound and Image: The World on a Disc	Nov	30
Keizer	Hyperclass: Interactive Multimedia Revolutionizes Education	May	34
Shapiro	Hyperstacks Done Dirt Cheap	May	40
Statt	The Apple II Culture Reborn	Feb	37
Statt	Integration for a New Generation	Nov	24

INTEGRATED SOFTWARE

AUTHOR	TITLE	ISSUE	PAGE
Cable	Sneak Preview: SmartWorks	Jan	66
Field	Templates, Templates Everywhere	Apr	41
Keizer	Your First Mac Package: What's the Best Deal?	Apr	46

MUSIC/SOUND

AUTHOR	TITLE	ISSUE	PAGE
Crotty	The MIDI Beat	Aug	44
Keizer	Command Performance	Aug	40

OPERATING SYSTEMS/INTERFACES

AUTHOR	TITLE	ISSUE	PAGE
Keizer	Family Ties: A Striking Resemblance in System Software	Feb	52
Linzmayer	It's a Bird, It's a Plane . . . It's System 6	Dec	56
Morrison/ Archer	Hard-Disk Drives Made Easy 3: Off the Beaten Track	Mar	88
Morrison/ Archer	Hard-Disk Drives Made Easy 4: The Wizard of OS	Apr	53
Morrison/ Archer	Hard-Disk Drives Made Easy 5: It Pays to Be Organized	May	57

PUBLIC-DOMAIN SOFTWARE

AUTHOR	TITLE	ISSUE	PAGE
Field	Templates, Templates Everywhere	Apr	41
Kohn	Users, Unite!	July	50
Kohn/ Woodard	Shareware: Bargains You've Never Dreamed Of	June	34
Shapiro	Hyperstacks Done Dirt Cheap	May	40

ROUNDUPS/NEWS

AUTHOR	TITLE	ISSUE	PAGE
Field	The Year in Review	Dec	42
staff	100 Issues of inCider: A Look Back	Apr	36

DEPARTMENT/COLUMN INDEX by month

APPLE CLINIC

AUTHOR	TITLE	ISSUE	PAGE
Fretwell	Undiscovered Territory	Jan	26
Fretwell	Wrap That Rascal	Feb	28
Fretwell	Cracking the Code	Mar	14
Fretwell	Directory Assistance	Apr	26
Fretwell	Applesoft BASICWorks	May	22
Fretwell	Cache Bash	June	17
Fretwell	Avoiding the Bottleneck	July	24
Fretwell	Backing Out Gracefully	Aug	20
Fretwell	Heat Wave	Sep	22
Fretwell	Shiftin' Gears	Oct	20
Fretwell	Chain Gang	Nov	20
Fretwell	Going to Work	Dec	20

APPLESOFT ADVISER

AUTHOR	TITLE	ISSUE	PAGE
Bishop	Smashing the Hi-Res Barrier	Apr	70
Bishop	Bit-Map Attack	Aug	60

APPLE IIGS BASICS

AUTHOR	TITLE	ISSUE	PAGE
Abernathy	Tools of the Trade	Feb	76
Lichty	Battle of the Languages 1	May	78
Lichty	Battle of the Languages 2	July	62

APPLEWORKS IN ACTION

AUTHOR	TITLE	ISSUE	PAGE
Witkin	Feathering the Nest	Jan	74
Witkin	The Taxman Cometh	Feb	60
Witkin	Word-Processing Wonders	Mar	94
Witkin	A Roof Over Your Head	Apr	58
Witkin	Crystal Gazing	May	64
Witkin	On the Road Again	June	46

APPLEWORKS IN ACTION

AUTHOR	TITLE	ISSUE	PAGE
Witkin	House of Cards	July	58
Witkin	Ye Olde Tax Tracker	Aug	50
Witkin	Fair Estimates 1	Sep	49
Witkin	Fair Estimates 2	Oct	48
Witkin	Entrepreneurial Edge	Nov	72
Witkin	Pick a Card	Dec	62

BRIDGING THE GAP

AUTHOR	TITLE	ISSUE	PAGE
Keizer	Macintosh Odyssey	Feb	66
Keizer	Swap 'til You Drop	Mar	100
Keizer	Telephone Tag	Apr	62
Keizer	Printer Polygamy	May	68
Keizer	The Developers' Platform	June	52
Keizer	The Mac LC's Split Personality	July	26
Keizer	Long Live 7.0	Aug	24
Keizer	Share the Wealth	Sep	26
Keizer	Instant Communication	Oct	24
Keizer	You Asked for It	Nov	68
Keizer	Graphics Decoder	Dec	26

EDITORS' CHOICE

AUTHOR	TITLE	ISSUE	PAGE
staff	The "Fine Art" of Platinum Paint	Jan	112
staff	Pipe Dream: Plumb Crazy	Feb	96
staff	Space Ace	Mar	120
staff	GeoQuiz: Global Challenge	Apr	88
staff	InWords	May	96
staff	Kid Pix!	June	80
staff	Apple IIe Card: Good Principles, Good Practice	July	80
staff	Milestones 2000	Aug	80
staff	HyperBole	Sep	72
staff	SimAnt: Down on the Farm	Oct	72
staff	Bookshelf Beauties	Nov	96
staff	Gate: Once Upon a Time	Dec	88

GRAPHICS GALLERY

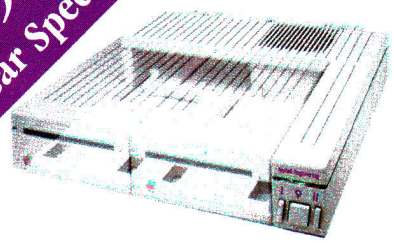
AUTHOR	TITLE	ISSUE	PAGE
Greh	Artist, Inspire Thyself	Jan	70
Greh	Vive la Différence	May	62
Greh	Capture the Moment	July	56
Greh	Is It Art Yet?	Sep	46
Goode	Palette Primer	Oct	56
Goode	Made in the Shade	Dec	66

HINTS

AUTHOR	TITLE	ISSUE	PAGE
Duggan	The Screening Room: BASIC Color Match	Jan	96
Thompson	ColorWorks: Bright Ideas	Feb	88
Orton Reynolds Danzi	Streamline It: HPLOT Data Reader Clean It Up Ampersand POKEs	Mar	114
O'Connor	Search Me! String Finder	Apr	82
Crotty	While the Cat's Away: No More Mousetrap	May	90
Crotty Gair	Potpourri of Tips: Memory vs. Storage Column-Width Macros	July	72
Crotty Crotty	Words to the Wise: ROM and Operating Systems Command Performance		

CONTINUED

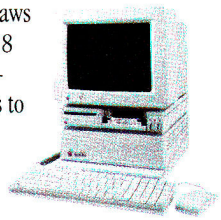
$79 New Year Special



Beat the heat

Heat. The computer user's most insidious enemy. Peripheral cards unavoidably produce heat inside your cpu. Heat that can devastate your whole system. Conserver™ effectively cools your IIGS while it protects against power surges and helps organize your workspace.

A quiet but powerful cooling fan draws air from the top of the IIGS at a rate of 18 cubic feet per minute, lowering the temperature inside by more than 20 degrees to offset the heat produced by expansion cards. The difference can be critical to the life of your computer.



Power surges also invisibly threaten your computer's well-being. They occur when voltage spikes surge through your wiring seeking a place to dissipate. If that place is inside your computer, you'll very quickly gain a greater understanding of the laws of electricity. It's not a pretty sight.

Special line conditioning filters and dual surge suppression circuitry protect against surges, reduce noise and provide "clean" power. Six switched AC power outlets line the rear of Conserver to accommodate your computer, monitor and four other peripherals. Thus protecting your computer *and* your peripherals from surges. The outlets are conveniently controlled by three front-mounted LED switches.

For beauty, we gave Conserver the same sleek lines of the IIGS and a perfectly matched platinum color. To reduce desktop clutter, the unit was cleverly designed to house two 3.5" disk drives, or one drive and the special diskette holder we include.

Conserver ..... ~~$99~~ **$79**

Order today!

To order or for more information, see your dealer or call (214) 241-6060 today, 9 am, to 11 pm, 7 days. Or send check or money order to Applied Engineering. MasterCard, VISA and C.O.D. welcome. Texas residents add applicable sales tax.

Applied Engineering®

The Apple enhancement experts.

A Division of AE Research Corporation

(214) 241-6060

P. O. Box 5100
Carrollton, TX 75011

Made IN THE USA

© 1990. AE Research, Inc. All rights resserved.Prices subject to change without notice. Brand and product names are registered trademarks of their respective holders

1991 INDEX

HINTS CONTINUED

Nelkin	MacroBiology	Aug	70
Crotty Nelkin	Alphabet Soup: System Extensions Auto-Indenter	Sep	66
Nelkin	Automated AppleWorks: Fast File Creation	Oct	64
Lee Dalzell	Hex Object: Decimal-to-Hex Converter What's an LPJSD?	Nov	90
Nelkin Statt Boulé	Get the Message: Prompts on the Menu Take Out the Papers and the Trash And Now for Something Completely Different . . .	Dec	80

INCIDER'S VIEW

AUTHOR	TITLE	ISSUE	PAGE
Muse	Don't Believe Everything . . .	Jan	8
Muse	The Heat of Battle	Feb	8
Muse	What a Long, Strange Trip	Apr	8
Muse	What's New	May	8
Muse	Best Intentions?	June	8
Muse	The Simple Life	July	8
Muse	Systematic Gamble: Apple Rolls a 7.0	Aug	8
Muse	Reality Check	Sep	8
Muse	Growing Pains	Oct	8
Thornburg	Look to the Future	Nov	8
Muse	Rasputin and the II	Dec	8

LEARNING CURVE

AUTHOR	TITLE	ISSUE	PAGE
Thornburg	Paradigm Paralysis	Jan	92
Thornburg	Pursuit of Knowledge	Feb	84
Thornburg	Test Case	Mar	112
Thornburg	Compact Discovery 1	Apr	80
Thornburg	Compact Discovery 2	May	88
Thornburg	Education's New Order	June	74
Thornburg	Classrooms Without Walls	July	74
Thornburg	Revolution in Computer Literacy	Aug	72
Thornburg	Call to Arms	Sep	63
Thornburg	Logo: Multimedia for Everyone	Oct	62
Thornburg	Spreading the Word	Dec	78

PRESS ROOM

AUTHOR	TITLE	ISSUE	PAGE
Field	Desktop Genealogy	Jan	78
Field	Top Form	Feb	70
Field	Marking Time	Mar	104
Field	Party Time!	Apr	66
Field	Show-Offs	May	74
Field	Desktop Publishing Goes CAD	June	61
Field	Desktop-Publishing Star Search	Aug	56
Field	Lavish Praise	Sep	56
Field	Cover-Ups	Oct	52
Field	Tempus Fugit	Nov	80
Field	Mug o' Cheer	Dec	70

CONTINUED

STATTUS REPORT

AUTHOR	TITLE	ISSUE	PAGE
Statt	No Trespassing	Jan	24
Statt	The Great Human Hope	Apr	25
Statt	Darwin and the Computer	May	20
Statt	The Old Geometer	July	22
Statt	Architecture of Software Piracy	Aug	16

REVIEW INDEX alphabetical by product name

CD-ROM

PRODUCT	AUTHOR	ISSUE	PAGE
Desert Storm	Holzberg	Oct	58

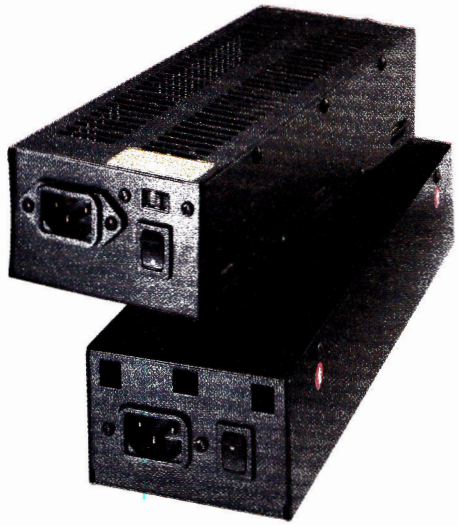
EDUCATION

PRODUCT	AUTHOR	ISSUE	PAGE
Amazing Window	Field	Dec	40
College Cost Explorer/ College Planner	Greer	Mar	21
Color 'n' Canvas	Holzberg	Jan	86
Delta Drawing Today 4.0	Webb	Sep	61
Desert Storm	Holzberg	Oct	58
The Geometer's Sketchpad	Field	Nov	88
GeoQuiz	Kohn	June	64
Gold Rush!	Greer	Feb	34
Inside Information/ Random House Encyclopedia	Holzberg	June	68
LogoExpress	Holzberg	Feb	33
McGee at the Fun Fair	Kohn	Nov	22
Mickey's Crossword Puzzle Maker	Holzberg	Sep	31
New Math Blaster Plus	Holzberg	Dec	74
The New Print Shop	Field	Jan	34
PlayWrite: Talking Puppets	Holzberg	Mar	108
Physics Explorer: Gravity	Kohl	Nov	86
Point of View: An Overview of U.S. History	Holzberg	Jan	89
Where in Time Is Carmen Sandiego?	Holzberg	Mar	16

ENTERTAINMENT

PRODUCT	AUTHOR	ISSUE	PAGE
Design Your Own Railroad	Holzberg	Aug	30
Dragon Wars GS	Kohn	Oct	58
Gold Rush!	Greer	Feb	34
HardBall II	Muse	Sep	32
The Immortal	Trunzo	May	84
McGee at the Fun Fair	Kohn	Nov	22
Mickey's Crossword Puzzle Maker	Holzberg	Sep	31
Pipe Dream	Trunzo	May	86
RoboSport	Gold	Oct	60
Spaceship Warlock	Holzberg	Dec	76
Tessarae	Holzberg	Aug	31
2088: Cryllan Mission, Second Scenario	Kohn	July	34
Where in Time Is Carmen Sandiego?	Holzberg	Mar	16

CONTINUED ON PAGE 73



Power to spare

With today's advanced peripherals and applications Apple didn't dream of a few years ago, it's easy to overload the standard Apple power supply. That's why Applied Engineering now offers a heavy duty power supply for the IIGS, IIe and II+. AE's Heavy Duty Power Supply more than doubles your Apple's power output.

Expansion cards, disk drives, accelerators, clock cards, modems, printer interfaces and the base computer itself all compete for the same power output. Expect to crank all of them up at once, and you can find yourself on the short end of the stick.

Apple's standard power supply provides only 2.5 amps, compared to our 6 amp output. AE's input voltage is 90 to 135 VAC/60 Hz or switchable to 180 to 270 VAC/50 Hz. Output is: +5V @ 6A, +12V @ 2A, -5V @ .5A, -12V @ .5A. Ripple is: 10mV typ. and full load operating temperature is: 32° to 122°F (0° to 50°C).

The AE Power Supply installs in minutes using the same four mounting holes and occupying the same space as Apple's power supply. Comes complete with a full one year warranty.

IIGS Power Supply.....$119
IIe, II+ Power Supply.....$99

Order today! To order or for more information, see your dealer or call (214) 241-6060 today, 9 am to 7 pm, 7 days. Or send check or money order to Applied Engineering. MasterCard, VISA and C.O.D. welcome. Texas residents add applicable sales tax.

Applied Engineering®
The enhancement experts.
A Division of AE Research Corporation
(214) 241-6060
P.O. Box 5100
Carrollton, TX 75011
Made IN THE USA

©1990 AE Research, Inc. All rights reserved. Prices subject to change without notice. Brand and product names are registered trademarks of their respective holders.

NEW from inCider/A+

You Have The Questions...

A+ FINANCIAL PLANNER

HAS THE ANSWERS!

How much will this investment be worth years from now?

Should I start an IRA?

Can I save enough to put my child through college?

Will my life insurance coverage really provide for my family?

Will I be able to afford a comfortable retirement?

ORDER TODAY for the special introductory offer of just $29.95!

Whether you're just starting out or getting ready to retire you need to decide what to do now to meet your goals for the future. And, to do that you need a clear view of your current financial status as well as a look into the future.

A+ FINANCIAL PLANNER helps you manage money now, study your various options, and makes planning for present and future easy.

A+ FINANCIAL PLANNER contains more than a dozen powerful AppleWorks 3.0 spreadsheets designed to be easy to use and easy to understand. Simply enter your personal financial data and A+FINANCIAL PLANNER takes the drudge work out of setting up budgets and balancing checkbooks. Other spreadsheets consolidate information about your saving and investment plans and produce projections for future growth. And that's not all...A+ FINANCIAL PLANNER helps you answer all those "what-if" questions you have — What if I get an IRA instead of a Certificate of Deposit? What if I save more now and less later?

A+ FINANCIAL PLANNER was created for AppleWorks 3.0 users by two outstanding professionals. Ray Whittemore is an insurance agent who creates spreadsheets for use in planning life insurance needs. Ruth Witkin, *inCider/A+*'s AppleWorks in Action columnist, is a well-known author and software specialist.

Plus you can use each spreadsheet as is or customize to suit your personal needs. Blank spreadsheets can be used over and over so you can analyze and re-analyze your needs and projections.

Financial planning is simple and hassle-free with this extensive collection:

- Record all that you own and all that you owe to see a clear, concise overview with PERSONAL NET WORTH.
- Look at what's happening now and forecast your year ahead with a fully itemized PERSONAL BUDGET.
- Maintain an error-free balance for your personal and business checking accounts with CHECKBOOK.
- Project your future savings from an IRA or tax-free account with IRA/TAX-FREE INVESTMENT PROJECTION.
- Calculate what you need to put away each month and the total cost of four years of college with COLLEGE SAVINGS PLANNER.
- Consider your best saving strategy comparing TAX-DEFERRED V.S. TAXABLE SAVINGS.
- Project and track expenses, salaries, etc. so you can clearly see your "bottom-line" with BUSINESS BUDGET.
- Keep track of employee hours quickly and easily with EMPLOYEE TIME CLOCK.
- Assess your current life insurance to decide whether or not you need additional coverage with LIFE INSURANCE NEEDS.
- Quickly answer a variety of "what if" questions when you're considering your financing options with FINANCIAL CALCULATOR.
- Consolidate details of present and future incomes to establish an overview of your retirement financial picture with RETIREMENT AND ESTATE PLANNER.
- Determine what income you will need in the future to maintain your current lifestyle with INFLATION ESTIMATED INCOME NEEDS.
- Take a look at how investments will grow year-by-year until retirement with projections into the future based on current ventures with CAPITAL PAYOUT.

YES! I want to bring my financial picture into focus with A+ FINANCIAL PLANNER for just $29.95!

NAME

ADDRESS

CITY STATE ZIP

❑ Payment enclosed (payable to *inCider/A+*)

Charge my: ❑ MasterCard ❑ Visa ❑ American Express

CARD # EXP. DATE

SIGNATURE

Product will begin shipping January 1, 1992. California residents: add 7.25% sales tax. Canadian orders: add 7% GST(GST #126038405). Foreign air mail: add $3.95. Foreign orders must be paid in U.S. funds drawn on a U.S. bank.

For credit card orders call toll-free 1-800-343-0728 (in NH: 924-0110).

5013 H215AC

***inCider/A+* Special Products, 80 Elm St., Peterborough, NH 03458**

FOR IMMEDIATE SERVICE, **CALL TOLL-FREE 1-800-343-0728** (in NH: 924-0100)

A+ FINANCIAL PLANNER requires AppleWorks 3.0. AppleWorks is a registered trademark of Apple Computer, Inc., licensed to Claris Corporation.

Free Product Info

DIRECT TO YOU
AT NO COST OR OBLIGATION

Want to Know More About Products Or Services Advertised In This Issue?

Here's How.

- Print your name and address where indicated.
- Tell us about yourself by answering the questions.
- Circle the numbers on the card corresponding to the reader service number for products or services that interest you.
- Tear out and mail the card.
- Subscribe to *inCider/A+* by checking off the ❑ where indicated. We'll bill you $27.97 for 12 issues of *inCider/A+*.* **That's 40% off the cover price.** Look for your subscription in 6-8 weeks.

NO OBLIGATION. Literature on products and services will be sent to you directly from advertisers, free of charge.

** This rate is limited to the U.S. and its possessions.*

inCider A+ Apple II/Macintosh

January issue
Valid until
March 15, 1992

Name _____

Title _____

Address _____

City _____ State _____ Zip _____

Phone ( ) _____

☐ Check here to start your subscription to *inCider/A+*. You will be billed $27.97 for 1 year (12 issues).*

I What computer do you use and/or plan to buy in the next 3 months?

	Use	Plan to buy
Apple II	☐ 1	☐ 4
Macintosh	☐ 2	☐ 5
IBM/MS-DOS	☐ 3	☐ 6

Which model?

Apple IIgs	☐ a	☐ i
Apple IIe/c/c Plus	☐ b	☐ j
Mac SE/Mac Plus	☐ c	☐ k
Mac Classic	☐ d	☐ l
Mac LC	☐ e	☐ m
Mac SE/30	☐ f	☐ n
Mac II series	☐ g	☐ o
Other computer	☐ h	☐ p

II Are you an educator? Yes ☐ q

1	26	51	76	101	126	151	176	201	226	251	276	301	326	351
2	27	52	77	102	127	152	177	202	227	252	277	302	327	352
3	28	53	78	103	128	153	178	203	228	253	278	303	328	353
4	29	54	79	104	129	154	179	204	229	254	279	304	329	354
5	30	55	80	105	130	155	180	205	230	255	280	305	330	355
6	31	56	81	106	131	156	181	206	231	256	281	306	331	356
7	32	57	82	107	132	157	182	207	232	257	282	307	332	357
8	33	58	83	108	133	158	183	208	233	258	283	308	333	358
9	34	59	84	109	134	159	184	209	234	259	284	309	334	359
10	35	60	85	110	135	160	185	210	235	260	285	310	335	360
11	36	61	86	111	136	161	186	211	236	261	286	311	336	361
12	37	62	87	112	137	162	187	212	237	262	287	312	337	362
13	38	63	88	113	138	163	188	213	238	263	288	313	338	363
14	39	64	89	114	139	164	189	214	239	264	289	314	339	364
15	40	65	90	115	140	165	190	215	240	265	290	315	340	365
16	41	66	91	116	141	166	191	216	241	266	291	316	341	366
17	42	67	92	117	142	167	192	217	242	267	292	317	342	367
18	43	68	93	118	143	168	193	218	243	268	293	318	343	368
19	44	69	94	119	144	169	194	219	244	269	294	319	344	369
20	45	70	95	120	145	170	195	220	245	270	295	320	345	370
21	46	71	96	121	146	171	196	221	246	271	296	321	346	371
22	47	72	97	122	147	172	197	222	247	272	297	322	347	372
23	48	73	98	123	148	173	198	223	248	273	298	323	348	373
24	49	74	99	124	149	174	199	224	249	274	299	324	349	374
25	50	75	100	125	150	175	200	225	250	275	300	325	350	375

4AAA1

inCider A+ Apple II/Macintosh

January issue
Valid until
March 15, 1992

Name _____

Title _____

Address _____

City _____ State _____ Zip _____

Phone ( ) _____

☐ Check here to start your subscription to *inCider/A+*. You will be billed $27.97 for 1 year (12 issues).*

I What computer do you use and/or plan to buy in the next 3 months?

	Use	Plan to buy
Apple II	☐ 1	☐ 4
Macintosh	☐ 2	☐ 5
IBM/MS-DOS	☐ 3	☐ 6

Which model?

Apple IIgs	☐ a	☐ i
Apple IIe/c/c Plus	☐ b	☐ j
Mac SE/Mac Plus	☐ c	☐ k
Mac Classic	☐ d	☐ l
Mac LC	☐ e	☐ m
Mac SE/30	☐ f	☐ n
Mac II series	☐ g	☐ o
Other computer	☐ h	☐ p

II Are you an educator? Yes ☐ q

1	26	51	76	101	126	151	176	201	226	251	276	301	326	351
2	27	52	77	102	127	152	177	202	227	252	277	302	327	352
3	28	53	78	103	128	153	178	203	228	253	278	303	328	353
4	29	54	79	104	129	154	179	204	229	254	279	304	329	354
5	30	55	80	105	130	155	180	205	230	255	280	305	330	355
6	31	56	81	106	131	156	181	206	231	256	281	306	331	356
7	32	57	82	107	132	157	182	207	232	257	282	307	332	357
8	33	58	83	108	133	158	183	208	233	258	283	308	333	358
9	34	59	84	109	134	159	184	209	234	259	284	309	334	359
10	35	60	85	110	135	160	185	210	235	260	285	310	335	360
11	36	61	86	111	136	161	186	211	236	261	286	311	336	361
12	37	62	87	112	137	162	187	212	237	262	287	312	337	362
13	38	63	88	113	138	163	188	213	238	263	288	313	338	363
14	39	64	89	114	139	164	189	214	239	264	289	314	339	364
15	40	65	90	115	140	165	190	215	240	265	290	315	340	365
16	41	66	91	116	141	166	191	216	241	266	291	316	341	366
17	42	67	92	117	142	167	192	217	242	267	292	317	342	367
18	43	68	93	118	143	168	193	218	243	268	293	318	343	368
19	44	69	94	119	144	169	194	219	244	269	294	319	344	369
20	45	70	95	120	145	170	195	220	245	270	295	320	345	370
21	46	71	96	121	146	171	196	221	246	271	296	321	346	371
22	47	72	97	122	147	172	197	222	247	272	297	322	347	372
23	48	73	98	123	148	173	198	223	248	273	298	323	348	373
24	49	74	99	124	149	174	199	224	249	274	299	324	349	374
25	50	75	100	125	150	175	200	225	250	275	300	325	350	375

4AAA1

Free Product Info

DIRECT TO YOU
AT NO COST OR OBLIGATION

PLACE STAMP HERE

inCider/A+
ATTN: Reader Service Dept.
P.O. Box 8987
Boulder, CO 80329-8987

PLACE STAMP HERE

inCider/A+
ATTN: Reader Service Dept.
P.O. Box 8987
Boulder, CO 80329-8987

Want to Know More About Products Or Services Advertised In This Issue?

Here's How.

- Print your name and address where indicated.
- Tell us about yourself by answering the questions.
- Circle the numbers on the card corresponding to the reader service number for products or services that interest you.
- Tear out and mail the card.
- Subscribe to *inCider/A+* by checking off the ❑ where indicated. We'll bill you $27.97 for 12 issues of *inCider/A+*.* **That's 40% off the cover price.** Look for your subscription in 6-8 weeks.

NO OBLIGATION. Literature on products and services will be sent to you directly from advertisers, free of charge.

**This rate is limited to the U.S. and its possessions.*

1991 INDEX

GRAPHICS/DESKTOP PUBLISHING

PRODUCT	AUTHOR	ISSUE	PAGE
BannerMania	Trunzo	Feb	32
Children's Newspaper Maker	Field	Aug	67
Color MacCheese	Goode	July	30
Color 'n' Canvas	Holzberg	Jan	86
Color+ 1.2	Webb	Apr	77
Delta Drawing Today 4.0	Webb	Sep	61
Design Your Own Railroad	Holzberg	Aug	30
Mercury	Trunzo	June	71
The New Print Shop	Field	Jan	34
Platinum Paint	Field	Apr	32
PlayWrite: Talking Puppets	Holzberg	Mar	108
Super GS Award Maker	Field	Aug	69

HARDWARE/PERIPHERALS

PRODUCT	AUTHOR	ISSUE	PAGE
Applied Engineering HD/ Sprite SD340	Linzmayer	May	28
GS Sauce	Crotty	July	35
Half Shell	Field	Sep	30
Q-Drive/ Resource Central SCSI	Chien	Oct	30
ZipGSX	Field	June	20

INTEGRATED SOFTWARE

PRODUCT	AUTHOR	ISSUE	PAGE
EuroWorks 3.0	Holzberg	Feb	80
GreatWorks	Kohl	Dec	38
SuperPatch	Trunzo	Jan	37
SuperWorks	Gibbons	Nov	23
TimeOut TextTools	Holzberg	Mar	18

MULTIMEDIA AUTHORING SYSTEMS

PRODUCT	AUTHOR	ISSUE	PAGE
Nexus	Statt	Apr	76

TELECOMMUNICATIONS

PRODUCT	AUTHOR	ISSUE	PAGE
LogoExpress	Holzberg	Feb	33

UTILITIES

PRODUCT	AUTHOR	ISSUE	PAGE
DesignMaster/Genesys 1.2	Berntson	Apr	34
EuroWorks 3.0	Holzberg	Feb	80
Harmonie/Independence	Howard	Dec	34
Inside Information/ Random House Encyclopedia	Holzberg	June	68
InWords	Kohn	July	70
ProSel-16	Howard	July	68
Salvation-Bakkup	Howard	May	32
SuperPatch	Trunzo	Jan	37
TimeLiner	Holzberg	May	30
TimeOut TextTools	Holzberg	Mar	18

WORD PROCESSING

PRODUCT	AUTHOR	ISSUE	PAGE
EuroWorks 3.0	Holzberg	Feb	80
Mercury	Trunzo	June	71
PlayWrite: Talking Puppets	Holzberg	Mar	108
TimeOut TextTools	Holzberg	Mar	18

READER SERVICE INDEX

Reader Service		Page
40	Abracadata	64
103	Alltech Electronics Co.Inc	65
*	Applied Engineering	CV4, 9, 11, 23, 59, 70, 71
64	Arminius Publications	75
87	Bible Research Systems	76
151	Big Red Apple	63
21	Co-Du-Co	75
11	Compsult	76
8	ComputerWorks	76
220	Educational Resources	CV3
85	Fas-Track Computer Prods	35
*	inCider/A+	
*	A+ Financial Planning	72
*	AppleWorks 3.0 Productivity Pak II	85
*	Classroom Management	87
*	Publish it!	85
44	LRO Computer Sales	74
248	Memory Plus Distribution	51
55	National AW User Group	77
16	OEM Corporation	75
237	Orange Cherry Software	6
59	Perfect Solutions	77
*	Preferred Computing	24,25
105	Price Busters	19
128	Programs Plus	52, 53, 54, 55
269	Public Domain Exchange	17
136	Quality Computers	CV2,2,3,4, 5,
7	Ramco Computer Supplies	75
33	Remarkable Technologies	22
90	Roger Coats	12, 13
29	Shreve Systems	76
291	Softdisk	1
127	SoftSpoken, Inc	75
23	Software of the Month Club	75
60/3	Spring Branch Software, Inc	76
36	Sun Remarketing	76
56	TMS Peripherals,Inc	60, 61
231	Tulin Corp	58
*	Utilico	76
61	Westcode Software	67
189	Zip Technology	40, 41

HARD DRIVE SPECIALS

NEW YEAR'S SAVINGS WITH LRO

ALWAYS LOWEST PRICES

We are Your One Stop for Quality Products at Superior Prices!

Why buy from LRO? Not only do we have ***FREE*** Technical Support, ***NO*** Restocking Fees & ***NO*** Credit Card Fees(*), but we will gladly accept your ***School & University P.O.***'s and provide ***Overnight Shipping*** upon request. Of course, your ***Satisfaction is Guaranteed!*** At **LRO Computer Sales** we do not believe in flashy, ads and cheap sales gimmicks that only cost YOU money. Call us for the ***Best Prices*** and our ***Excellent Service!***

MEMORY

Applied Engineering		256K	512K	1MB
Æ RAMWorks III		$129	$147	$175
Æ Z-RAM Ultra II		$189	$205	$229
	1MB	2MB	4MB	6MB
Æ GS-RAM III	$139	$197	$295	n/a
Æ GS-RAM Plus	$179	$229	$309	$399
CV-Tech	1MB	2MB	3MB	4MB
GS Memory Board	$129	$175	$219	$265
MPD	1MB	2MB	4MB	
GS-4 Memory	$99	$135	$225	
	256K	512K	1MB	
Super Expander IIe	$75	$85	$109	
Harris Labs	1MB	2MB	4MB	
GS-Sauce	$129	$169	$259	

Expansion Memory	
1mb Exp. Sets 80ns (Ram Plus, GS-4, CV-Tech, others)	$ 45.00
1mb GS-RAM III expansion set (2)	$ 65.00
1mb SIMM Module (GS Sauce, OctoRAM, Mac)	$ 45.00
256K Expansion Sets (RW III, Z-RAM, Apple IIGS, etc...)	$ 16.00
256Kx4 GS-RAM Ultra Sets	$ 12.00
For Hard Drives	
NEW! RAMFAST GS!! Smaller and Less Power	$179.00
Apple Hi-Speed DMA SCSI card	$ 99.00

HARD DRIVE BONANZA

LIMITED TIME SPECIALS!

NC Pro 40	$280.00
NC Pro 80	$365.00
NC Pro 120	$450.00
NC Pro 200	$680.00

2 YEAR WARRANTY ON ALL DRIVES

Because of the unprecedented popularity of our ***NC Pro Portable Drives***, we were able to secure a large lot of these at very special prices – savings that we are passing on directly to you!

The ***New Concepts Storage Pro*** uses the proven ***CONNER*** mechanisms of uncomparable reliability and speed. Our 40,80,120 and 200 meg drives all utilize VCA mechanisms with on-board caching for the best possible performance. Not only do you pay less for these compact, fast, portable drives... but you get more–a whopping 32 megabytes of free software (including the latest System software) installed and at your disposal. The Best Drive at the Best Price.

As always, LRO is coming through with the Best for Less!

Portable Drive Kit $59.00

(*) Not all mechanisms compatible with the mechanical and electrical requirements of the portable kit. Call for details on compatibility.

ACCELERATORS

ZIP Technologies	
Zip GS 7MHz/8K cache	$ 147.00
Zip GS 8MHz/16K cache	$ 189.00
Zip GS 9MHz/16K cache	$219.00
Zip GS 9MHz/32K cache	$ 247.00
Zip IIe/c accelerator	$139.00
Applied Engineering	
TransWarp GS 7MHz/8K cache	$ 219.00
TransWarp GS 7MHz/32K cache	$ 289.00
TransWarp GS 32K cache upgrade	$ 81.00
TransWarp GS 9MHz upgrade	$ 409.00

MODEMS & SOFTWARE

Æ DataLink 2400 Internal	$167.00
Æ DataLink 2400 Express	$159.00
Æ DataLink 2400 Express II	$199.00
ZOOM 2400 External/7 year warranty!	$99.00
Æ ReadyLink Software	$69.00
InSynch ProTERM v3.0	$79.00

MISCELLANEOUS

Digitizers	
NC Visionary GS w/Allison Software Real-Time Color–B/W Video Digitizer – The Best!!!	$279.00
Scanners	
Quickie Hand Scanner GS	$191.00
Quickie Hand Scanner/InWords OCR bundle	$265.00
WestCode InWords OCR	$ 77.00
Printers	
Hewlett Packard DeskJet 500	$ 499.00
Panasonic Printers	CALL!
Apple Imagewriter II Printer	$ 449.00
Apple StyleWriter	$ 449.00
Storage	
NCS 45MB Removable Cartridge Drive	$479.00
NCS 660MB CD-ROM Drive (350ms)	$549.00
Apple II GEM CD-ROM	$ 89.00
Power Supply Replacements	
Apple IIGS Heavy Duty Power Supply	$ 69.00
Apple IIe Heavy Duty Power Supply	$ 55.00
Macintosh LC Heavy Duty Power Supply	$ 99.00

CV-TECH Ram Card
A DMA compatible RAM card with a unique piggy-back connector that lets you use your existing 1 meg Apple card , 4 meg GS Juice or 4 meg Chinook for more memory.

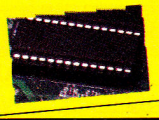
SOFTWARE

Apple Computer, Inc.	
Apple HyperCard GS	$ 79.00
GS/OS System Software v6.0	CALL !
Roger Wagner Publishing	
HyperStudio v3.0	$103.00
Spring Branch Software	
GS Numerics	$ 87.00
Mac Numerics	$ 139.00
Time Works	
Publish It! 4 Apple IIe/IIc/IIGS	$ 77.00
Mac Publish It! Easy 2	$ 119.00
Vitesse	
Salvation, Bakkup, Deliverance	$ 29.00
Exorsizer or Renaissance (each)	$ 48.00
Salvation Wings	$ 99.00
Salvation Supreme (all 5 modules)	
Claris	
AppleWorks Classic v3.0	$169.00
AppleWorks GS v1.1	$199.00
WestCode	
InWords GS	$ 77.00
Pointless GS	$ 49.00

TrueType interpreter in software for your GS. Get Mac-like output on your GS with a simple software add-on!

SOFTWARE

Toolbox	
The GATE GS	$ 45.00
FTA Photonix II GS	$ 40.00
FTA Space Fox GS	$ 49.00
MCX	
HoverBlade GS	$ 29.00
Programming Tools	
Genesys GS by SSSi	$ 79.00
Orca/C –Learn package	$129.00
Orca/Pascal –Learn package	$129.00
Electronic Arts	
Mavis Beacon Teaches Typing GS	$ 31.00
ChessMaster 2100 GS	$ 31.00
Triad Software	
Disk Labeler GS (v2.0)	$ 24.00



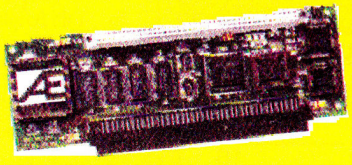
ZIP accelerator for IIe/c
Put some ZIP into your Apple II with any of the accelerators by ZIP Technologies.

APPLIED ENGINEERING

Vulcan Drives	
Æ Vulcan Gold Upgrade	$46.00
Æ Vulcan 40MB Hard Drive	$ 579.00
Floppy Disk Drives	
Æ 3.5" Disk Drive 800K	$ 187.00
Æ 3.5" Disk Drive 1.44MB	$ 225.00
Æ 3.5" Disk Drive 1.6MB–GS	$ 239.00
Æ 5.25" Disk Drive A2/Mac LC	$ 139.00
MPD 5.25" Disk Drive Daisy-Chain	$ 99.00
PC-Transporter	
Æ PC-Transporter	$ 240.00
GS Installation kit	$ 35.00
IIe Installation kit	$ 29.00
Æ Transdrive	$ 189.00
ÆTransdrive dual 5.25"	$ 289.00
Transdrive 5.25" & 3.5"	$ 275.00
Transdrive 3.5" add-on	$ 89.00
PC-style Keyboard for Transporter	$ 89.00

MACINTOSH

Macintosh Computers	
Macintosh IIsi 3/40	$ 2,599.00
Macintosh Classic	$ 899.00
Macintosh LC	$ 1,799.00
Mac LC IIe emulator	$ 199.00
Macintosh Enhancements	
Mac LC 512K VRAM	$ 99.00
Quicksilver IIsi w/68882 option	$ 298.00



Don't See It? Call us!

We have the Best Products for You at the Very Best Prices – Anywhere!!

SCHOOL & UNIVERSITY P.O'S WELCOME!

DISCOVER · FEDERAL EXPRESS · MasterCard · VISA

FAX: (815) 338-4332
Tech Support: (815) 338-8746
International: (815) 338-8658

CALL NOW • TOLL FREE ORDERS ONLY

(800) 869-9152

Illinois Residents Call (815) 338-8685

665 West Jackson Street, Woodstock, IL 60098

LRO COMPUTER SALES

INC 11/91

No surcharge for Visa/MC and Discover. Standard Shipping charges 3%, minimum $4. Additional charges apply for Air & International shipments. Illinois residents add 6.5% sales tax. No sales tax for out of state purchases. All Hardware may be returned within 30 days of receipt with no restocking fee (Must have RMA#). Shipping charges vary. Prices & availability subject to change without notice. So Saith Michelle!

Circle 44 on Reader Service Card.
Circle 44 on Reader Service Card.
Circle 44 on Reader Service Card.

©1991 OCP Marketing Group
©1991 OCP Marketing Group
©1991 OCP Marketing Group

!!!REPAIRS!!!

Apple II+, IIe, IIc
Logic Board swap $99 + S&H
Mac+, SE Logic Board swap $225 +S&H
ONE YEAR WARRANTY
Apple 5.25" DD Rehab $75 + S&H
Apple 3.5" DD Rehab $125 + S&H
Mac+, SE Power supply sweep $59+S&H
Call for more information!
We buy dead Apple, Mac, and PCs
Hours: 12.00 - 5.00 PM ET
6.30 - 10.00 PM ET
MON - SAT

Arminius Pubs. and Prods. Inc.
8519 Orchard Avenue
Merchantville, NJ 08109
(609) 662-3420

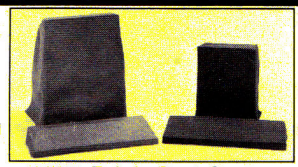
Circle 64 on Reader Service Card.

MARKETPLACE

Marketplace Ads get results! You can place an ad in this attention-getting section at a very reasonable cost. Call Diane toll-free at **800-441-4403** for helpful advice and reservations. Start seeing *your* ad here next month.

DUST COVERS

Gray Navy Royal Tan Red Brown



100% Fabric Dust Covers

- Heat Ventilating, Unlike plastic, and Won't Dry Out, Yellow or Crack with age! • Machine Wash & Dry!
- Highest Quality, Custom-Fit Designs! • For Apple, MAC, IBM, Compaq & many more! • Custom orders!
- Monogramming and Silk-screening Available!
- 100% Satisfaction Guarantee! • Service since 1983!

10-62 IIgs, RGB Mon & Kbd	29.95	95-24 Laser 128 CPU	15.95
10-87 IIgs, KSS, RGB & Kbd	29.95	10-60 Apple 3.5" Drive	6.95
10-96 IIgs, RGB & Kbd (3 pc)	34.95	10-38 Apple 5.25" Drive	6.95
10-67 IIgs Keyboard Only	6.95	10-59 3.5" on top 5.25"	9.95
10-16 IIc & Monitor IIc	24.95	11-30 Mac Classic & Kybd	24.95
10-61 IIc & Color Mon IIc	29.95	11-32 MacLC,12" Mtr & Kyb	29.95
10-17 IIc External Drive	6.95	11-36 Mac IIsi,13" Mtr & Kyb	29.95
10-58 IIe & IIe Color Monitor	29.95	10-37 Imagewriter II	15.95
10-34 IIe Computer Only	15.95	10-90 LaserWriter II	24.95
10-32 IIe Color Monitor Only	19.95	11-25 Personal LaserWriter	24.95
10-07 IIe & IIe Mono Monitor	24.95	11-52 Stylewriter	15.95

Add $4.00 Shipping & Handling (Check, MO, COD, VISA/MC)

CO-DU-CO Computer Dust Covers
4802 W. Wisconsin Ave., Milwaukee, WI 53208
800-735-1584 • 414-476-1584 • 414-476-9329 FAX

Circle 21 on Reader Service Card.

• FREE •

10 ASSORTED PACKAGES OF OUR BEST SOFTWARE APPLE][/GS OR MAC®

1. GAMES for apple or mac
2. EDUCATION for apple or mac
3. RELIGION for apple or mac
4. PRINTSHOP ART for apple
5. CLIP ART for Mac
6. APPLEWORKS for apple
7. HYPERCARD for Mac
8. FONTS for Mac
9. BUSINESS for Mac
10. UTILITIES for apple or mac

PAY ONLY $5.00 SHIPPING & HANDLING PER PACKAGE
• credit cards only •
EACH PACKAGE CONTAINS 15/5.25" OR 6/3.5" DISKS

SMC SOFTWARE PUBLISHERS
ORDER TODAY - CALL
619 931-8111
EXTENSION 511

Circle 23 on Reader Service Card.

OMNISHORE ELECTRONICS MFG. CORP.

- A quality source of your external SCSI hard disks, tape backups, and combo units. Apple, Mac, IBM compatible.
- An exclusive manufacturer of all FIRST CLASS PERIPHERAL SIDERS. Also provide service, repair, and upgrade on existing models.
- See our AD in the upcoming issues of this magazine.

1700 Forrest Way
Carson City, NV 89706
Sales: 800-982-3232
Tech Spt: 702-687-2800

• PLEASE MENTION THIS AD •

Circle 16 on Reader Service Card.

COLOR RIBBONS & PAPER

Colors: Black, Red, Blue, Green, Brown, Purple, Yellow

Ribbons: price each	Black	Color	T-Shirt Ribbns
Apple Image, I, & II	$3.75	$4.50	$6.50
Apple Image, II 4 -Color		$5.95	$10.00
CitizenGSX140	$4.00	$5.00	$7.50
CitizenGSX140, 4-Color		$13.25	$18.00
Epson MX-80	$3.75	$4.50	$6.75
Okidata 182/192	$5.00	$7.50	
Panasonic 1180/1124	$5.00	$7.50	
Star NX 1000	$3.50	$4.50	$6.75
Star NX 1000, 4-color		$6.25	$10.00

T-Shirt (Heat Transfer) Ribbons
Colors: Black, Red, Blue, Green, Brown, Purple, Yellow

COLOR PAPER

Color Paper:	200 Shts assorted	
Bright Pack:	9½ x 11	$10.90/pk
Pastel Pack :	9½ x 11	$7.90/pk
Color Certificate Paper:	100 sheets	$9.95/pk
Color Banner Paper:	45 ft/roll	$8.95/roll
Holiday Paper:	**50 sheets**	**$6.90/pk**

Min. orders: $25.00. Minimum S&H: $4.50. Call for other ribbons and supplies. Price and spec. are subject to change w/o notice.

RAMCO COMPUTER SUPPLIES
P.O.Box 475, Manteno, IL 60950 U.S.A
USA 800-522-6922 orUSA 815-468-8081(Canada) 800-621-5444

Circle 7 on Reader Service Card.

APPLEWORKS ⇔ IBM

CROSS-WORKS 2.0 can exchange AppleWorks data files with the most popular MS-DOS programs:

NEW!

AppleWorks ⇔ Microsoft Works
AppleWorks Word Proc. ⇔ WordPerfect
AppleWorks Spreadsheet ⇔ Lotus 1-2-3
AppleWorks Data Base ⇔ dBase III, IV, etc.

In seconds, ***CROSS-WORKS*** copies files either way between your Apple *II* and IBM PC, and translates the file formats. Word Processor files maintain underlining, margins, centering, etc. Spreadsheets transfer data **and** formulas! Transfers ASCII text files too. **Includes universal 19,200 baud cable** to connect ***IIe*** (with Super Serial Card), ***IIc, IIcPlus*** & ***IIgs*** to PC, XT, AT, PS/2 & compatibles. Also supports modem transfers. Both 5¼ **and** 3½ inch disks included.

AppleWorks 3.0 Compatible!

*"...Look no further. SoftSpoken's CROSS-WORKS carries the biggest stick in the file translation/transportation business... **Rating:** ★★★★" — **InCider** July, 1989*

CROSS-WORKS™ $99.95 + Shipping & Hand.
30 Day money-back guarantee! School P.O.s welcome.
☎ **(919) 870-5694** for free information.

***Soft*Spoken**
P.O. Box 18343
Raleigh, NC 27619

Circle 127 on Reader Service Card.

Cheap Buys

Macintosh		Apple //	
Mac Plus	$595	Apple //e	$199
Mac Plus/40mb	$995	Apple //c	$249
Mac SE	$895	Disk //	$79

Apple // Software		Accounting	
Catalyst //e	$49	BPI GL	$39
Word Juggler //e	$49	BPI AR	$39
Terminus //e	$29	BPI AP	$39
Legal Dictionary	$29	Additional Module	$39

Many more items in our complete catalog.

All computers are reconditioned and come with a 30-day money-back guarantee and a 90-day parts and labor warranty. Call for specific details.

Call 24 hrs. a day for free catalog.

Sun Remarketing, Inc.

1-800-821-3221

Sun Remarketing, PO Box 4059, Logan, UT 84321

Circle 36 on Reader Service Card.

BACK UP YOUR DISKS

When one of your favorite disks "crash" and the software publisher is out of business, all is lost—unless you've made a back up copy. With **Essential Data Duplicator 4.9 PLUS** you can back up your uncopyable "copy-protected" 5.25 inch disks . . . before it's too late!

EDD 4.9 PLUS copy system uses a special interface card for accurately backing up more disks than all copy programs together, guaranteed! In addition, we've included several useful utilities.

EDD 4.9 PLUS runs on apple compatibles, II+, IIe, and IIgs; price, **$129.95**. *Daisy chain type or duodisk drives need $15 cable adapter.* Add $5 shipping ($8 foreign).

A software only version, **EDD 4.9 standard**, runs on apple compatibles, II+, IIe, IIc, IIgs, and III; price, **$29.95**. Add $3 shipping ($6 foreign).

No risk — If unhappy for any reason, return in 30 days for refund.

If you already own **EDD**, please pass this message to a friend.

Phone orders (707) 965-2290 weekday mornings (P.S.T.). M/C, Visa accepted. Or, send orders to: **UTILICO**, 3377 Solano Ave., Suite 352, Napa, CA 94558. **EDD** is also available through your favorite software dealer.

ESSENTIAL DATA DUPLICATOR

Bible Software

Find any verse in the Bible, search for any word or phrase. Easily find the exact verse you need for your study. Build personal condcordances to the Bible. We also offer a topical index and a Greek transliterator. For ProDos, Macintosh & MSDOS. Call for a **FREE** brochure.

(800) 423-1228

Bible Research Systems

2013 Wells Branch Pkwy #304
Austin, Texas 78728
(512) 251-7541

Circle 87 on Reader Service Card.

SOFTWARE CLOSEOUTS
For Apple & Macintosh

INFOCOM BARGAINS FOR APPLE ..... **$5 each**
Wishbringer, Leather Goddesses of Phobos, Beyond Zork, Zork Zero, Planetfall, Mines of Titan, Shogun, Lane Mastodon or Gamma Force.

ACCOLADE BARGAINS FOR APPLE ..... **$5 each**
Comics, Dambusters, Sundog or Law of the West.

SPECIAL BUNDLE FOR APPLE IIgs ..... **ONLY $10!!!**
LIST PLUS & TELEWORKS PLUS, by Activision

SPECIAL BUNDLE FOR MACINTOSH ..... **ONLY $10!!!**
BUSINESS CLASS & CITY TO CITY, by Activision

AVALON-HILL SPECIAL PURCHASE FOR APPLE . . . . . **$10 each**
Beast War, Darkhorn, Dr. Ruth, Dreadnoughts, Super Sunday, Mission on Thunderhead, Parthian Kings, Police Blotter, Shootout at O.K. Galaxy, Empire Overmind, Draw Poker, Conflict 2500, Voyager, Under Fire, T.A.C. or Tsushima.

SPECIAL DEALS FOR APPLE

Arthur: The Quest for Excalibur, by Infocom	$14.50
A Mind Forever Voyaging -or- Cutthroats, by Infocom	$14.50
Maniac Mansion -or- Hacker, by Activision	$14.50
President Elect -or- Epidemic, by SSI	$9.50

SPECIAL DEALS FOR APPLE IIgs

The Graphics Studio, by Accolade	$14.50
Writer's Choice Elite, by Activision	$19.50

TO ORDER, SEND CHECK OR MONEY ORDER TO:
COMPSULT
DRAWER 5160, SAN LUIS OBISPO, CA 93403-5160
Include $4 for shipping charges in U.S., $8 for Canada, $12 for Int'l. CA addresses add 7.25% sales tax.

1-800-676-6616

CREDIT CARD ORDERS ONLY, PLEASE!!! $25 Minimum
To receive a complete catalog of over 2,000 closeout items for all computer types, send $2 in cash or postage stamps to the above address. The catalog is FREE with any order! To check for an item not listed, or any other questions, call (805) 544-6616.
WE ALSO CARRY SOFTWARE FOR IBM, COMMODORE 64/128, AMIGA, ATARI & MORE!!

Circle 11 on Reader Service Card.

ComputerWorks

$199

LASER 128 Factory Reconditioned Full One Year Warranty

We stock the entire line of Laser Computers, Drives, Cards, RAM, Monitors, Printers, Modems, Cables, and more!!!

Laser 128	$289	5 1/4" Drive	$89
Laser 128EX	$359	IIe Ext. 80 Col.	$29
Mono Monitor	$99	IIe Par. Card	$29
Color Monitor	$179	IIe Serial Card	$49

LASERS' LARGEST "FACTORY AUTHORIZED" SERVICE CENTER

Credit Cards Accepted • School PO's Accepted

Call Toll Free Order Line

1-800-969-6757

4544 Memorial Drive, Suite 302
Decatur, Georgia 30032

Circle 8 on Reader Service Card.

2 POWERFUL SOFTWARE PROGRAMS from Spring Branch™

COMPLETE MATHEMATICAL PROGRAMS for HIGH SCHOOL and UNIVERSITY STUDENTS or WORKING PROFESSIONALS

GSNumerics
for the APPLE IIGS COMPUTER

- SCIENTIFIC CALCULATOR • Atomic Weight & Number. • 196 Unit Conversions. • Automatic Function Parsing. • Complex Math. • 64 Functions.
- POLYNOMIAL & NON-POLYNOMIAL OPERATIONS • Solve for y. • Slope. • Area. • Roots. • Integrate & Differentiate Polynomials.
- x-y REGRESSION • Linear. • Log. • Exponential. • Power.
- SYSTEMS OF LINEAR EQUATIONS • Real or Complex, up to 10 x 10.
- MATRIX OPERATIONS • Add. • Subtract. • Multiply. • Scalar Multiplication. • Transpose. • Inversion. • Determinant. • Real or Complex up to 10 x 10.
- COMPLETE FILE OPERATIONS
- GRAPHICS • Polynomials. • Non-polynomials. • x-y Data. • Regressions. • Graph Magnification. • Overlay Two Functions. • Overlay Function and Derivative. • Overlay Function and Integral.

Circle 60 on Reader Service Card.

NEW

MacNumerics
for the Macintosh Computer

The NEW MacNumerics has all the basic functions and features of GSNumerics PLUS...

- POLYNOMIAL OPERATIONS • Enter In Polynomial Form. • Enter In Factored Form. • Enter As A Factor Power Expansion. • Factor Polynomials With Real And Complex Factors.
- GRAPHICS • Compute And Display Real Roots. • Compute And Display Area Between Two Points. • Compute And Display Common Solutions. • Compute And Display Area Between Two Functions.
- SHOW COMPUTATION STEPS

TWO POWERFUL TOOLS FOR TEACHING AT THE HIGH SCHOOL & UNIVERSITY LEVELS

For complete information contact:

Spring Branch Software, Inc.
P.O. Box 342 • Manchester, IA 52057
Phone: (319) 927-6537

Circle 3 on Reader Service Card.

Parts

Logic boards, drives, controllers, monitors!

Buy-Sell
Repair-Upgrade

Apple II, Macintosh & IBM PS/2

Shreve Systems

3804 Karen Lane
Bossier City, La. 71112 FAX 318-742-2799

800-227-3971

School & Government P.O.'s accepted!

Circle 29 on Reader Service Card.

Perfect Solutions

	Computer	w/Amber	w/Color
LASER 128	279	368	468
LASER 128 refurb	179	268	368
LASER 128EX	359	448	558

Largest LASER Repair Center & Education Dealer in Southeast.

Copy II+ 9.0 $14.95

Kraft Joystick...25
No-Slot Clock.....36
Amber Monitor.....95
Zoom 2400 Modem...79
Mouse for Laser or IIc...45
LASER PC-4 for Mac.....222
LASER Expansion Box.....55

UDC - connect 3.5 Drive to Apple IIe.....45
Safeskin Keyboard Protector for Laser, IIe, IIgs.....20
LASER 5.25 Drive...89 LASER 3.5 Drive...119
LASER 14" RGB color + green + tilt & swivel.....210
Magnavox Color for IIe.....288 RGB for IIgs.....308
IIe Printer Card w/cable: Parallel...45 Super Serial...62
LASER 192A ImageWriter Compatible Serial...189
LASER 190A ImageWriter Compatible Parallel...169

LASER *Experts* **1-800-726-7086**

Memory 128K Card for IIe...25
1 meg Chips for IIgs...45 256K for Laser & Apple...18
RAM Card for IIe...52 IIgs...59 IIc...69 Laser 128...25

We price match. School PO's, Charge & COD accepted.

International Orders (407) 790-1070
12657 Coral Breeze Drive W. Palm Bch, FL 33414

Circle 59 on Reader Service Card.

Must you be an accountant to do your taxes?

Provides a lot of intuitive insight. Great technical support. Gets the job done! *USA Today*

Supports all Apple II's. Offers a host of time-saving features. Well written user's manual. Toll-free support for questions about taxes & program. *inCider/A+*

Very easy to run, quite instructive & leads you into each step with assurance. I recommend it! *Apple Bits User Group*

Not with TaxCalc

Prepare your return quickly and accurately with TaxCalc-91, now in its 5th year!

Using the tax guide you'll learn and use many tax tips written in plain English.

If you need help with the program or your taxes call us toll-free!

$39.95 + $2 s&h

1-800-726-7086

Easy and automated with tax theory and all IRS worksheets built-in. Calculates best tax advantages, populates forms, enters tax - FAST. Built-in calculator. Save data to disk. Requires 48K, 1 drive, printer optional. Annual update $24.95.

Calculates 1040 + A, B, C, D, E, SE, 2106, 2119, 2441, 3903, 4562 + totals from F, R, 4797, 4868, 4972, 6251, 6252.

Only $29.95
buys ten great projects for AppleWorks GS

APPLEWORKS GS PRODUCTIVITY PAK II

Our expertly designed templates explore the many features of AppleWorks GS and show unique ways to approach an assortment of projects. A comprehensive reference guide provides step-by-step instructions for using the templates and suggests production techniques that will make your projects look their best.

FAMILY TREE
VIDEOTAPE LIBRARY
CAR-COST COMPARISON
CUSTOM CALENDARS
HOME BUYER'S GUIDE
LIVING WILL
COOKBOOK
BOOKLET
COLLEGE GUIDE
INCOME TAXES

Requires AppleWorks GS v.1.1
AppleWorks is a registered trademark of Apple Computer, Inc., licensed to Claris Corporation.
Foreign Airmail: add $3.95.
Foreign orders must be paid in U.S. funds drawn on a U.S. bank.
Canadian orders: add 7% GST.
California residents: add 7.25% sales tax.

ORDER TODAY!

1-800-343-0728
In NH: 924-0100
Fax: 603-924-9384

inCider/A+ Special Products
80 Elm Street
Peterborough, NH 03458

#5022 H215CC

1040Works—Now in its 7th year!

Taxes

1040Works is a series of professionally developed AppleWorks templates that compute your 1991 Federal Income Taxes. 1040Works is accurate, fast, and easy to use. The templates help you prepare and print 23 forms and schedules including 1040, A, B, C, D, E, F, R, SE, 2106, 2119, 2210, 2441, 3903, 4562, 6251, 8283, 8582, 8582-CR, 8606, 8615, 8814, and 8829.

Order 1040Works if you have a 128K system. Order 1040Works-X if you have 256K of RAM and AppleWorks 2.0 or later.

Includes step-by-step instructions. Satisfaction guaranteed or your money back. Visa/MC accepted. $32.95 + $3.50 s/h.

National AppleWorks Users Group
Box 87453 • Canton, MI 48187
(313) 454-1115

Circle 55on Reader Service Card.

60%off!

Was $39.95
now **just $16.00!**

PUBLISH IT! YOURSELF

inCider/A+'s ready-to-use templates take the frustration out of designing a variety of popular desktop-publishing projects. Use it with Publish It! 2 (or higher)* to create attractive newsletters, brochures, forms and more. Ten projects come on a 5.25" disk with an easy-to-follow instruction booklet.

*Publish It! is a registered trademark of Timeworks, Inc.
Canadian orders: add 7% GST.
Foreign airmail: add $3.95. Foreign orders must be paid in U.S. funds drawn on a U.S. bank. California residents:add 7.25% sales tax.

***inCider/A+* Special Products**
80 Elm Street, Peterborough, NH 03458
1-800-343-0728 (In NH: 924-0100)

#5051 H215DD

CLASSIFIED

Entertainment

HAVE YOU WON THE LOTTERY? DO YOU OWN LOTTO PICKER™ ? WELL, WHAT DID YOU EXPECT!
LOTTO PICKER for Apple II is a must purchase if you are SERIOUS about winning larger jackpots and generating more frequent smaller winnings on a routine basis! LOTTO PICKER works by uncovering hidden biases in your lottery game and exploiting them in order to provide you with qualified plays to make. Your card will be loaded with numbers that have proven to be statistically significant for your lottery game. Works for all lotteries worldwide (including daily number games). *NEW LOW PRICE* $29.95 (+$4.55 s/h)
SATISFACTION GUARANTEED!
ORDERS: 1-800-484-1062 s-code 0644
or 1-718-317-1961

GE RIDGE SERVICES, INC.
848 Rensselaer Ave. Dept. IC
Staten Island, NY 10309.

NEW! - THE SYSTEM
Fly to the 9 planets-dock at space stations-spacewalk for maintenanance and repair...but first master 15 training games. Accurate distances, times, forces, motions, and challenges of actual space flight. Special programs describe the Solar System and explain the physics of space flight.
ANCHORMAN- "addicting ...frustrating and challenging "- a Californian."Best ever bowling simulation" -Nibble. "IMPRESSIVE and RECOMMENDED"- inCider/A+.
Apple IIe, IIc, IIc+, IIGS, 128K
Special mail order prices VISA/MC/Ck/MO
THE SYSTEM $39 ANCHORMAN $29
BOTH $49

Virginia REAL Software, Inc.
PO Box 8545
Norfolk, VA 23503
(804) 587 4952

Use inCider/A+ Classified Section to showcase your Products. Contact Diane Maguire at 1-800-441-4403 for further details.

Batteries

Your Computer Out of Time?
Slide-On® Battery Replacement Kit is best way to replace clock battery on ROM Version 01 Apple IIGS.
- Easy installation
- No Solder Required
- Complete Instructions
- Heavy Duty Lithium Battery
- 10 Year Shelf Life
- Satisfaction Guaranteed

$14.95 each Kit or $120 for 10 Kits
Send Cash, Check, MO, or School P.O..
Add $2 S/H per order ($5 Foreign) KS residents 6% tax. VISA/MC.
FAX: (913) 362-5798

NITE OWL PRODUCTIONS
Slide-On Battery Dept.
5734 Lamar Street
Mission, KS 66202
(913) 362-9898

BACK ISSUES
Back issues of *inCider/A+* can be purchased, subject to availability, for $4.50 per issue plus shipping (1-9 copies, add $1 per issue: 10+ copies,add $7.50 per order). Currently, most issues from 1988 to present are in stock. If you wish to purchase back issues, send in a written request with a check, money order, or credit card information to: *inCider/A+* Back Issues, 80 Elm Street, Peterborough, N.H. 03458. (All foreign orders must be paid in U.S. funds drawn on a U.S. bank.) Or you may charge your order to your credit card by calling1-800-343-0728.(Inside NH: 924-0100)

Public Domain

APPLE PUBLIC DOMAIN DISKS
Request free catalog or send $2 for sample disk & catalog (REFUNDABLE). Categories include education, utilities, games, business, Print Shop graphics, shareware, EAMON and more. Buy as low as $1.00 per disk. A $20 order gets 4 free disks of your choice. NEXT DAY SHIPPING! We have been distributing Public Domain programs since 1986 and will continue to provide timely, courteous responses to all inquiries. Purchase Orders welcomed!
VISA/MC accepted.

CALOKE INDUSTRIES (DEPT. SK)
P.O.Box 18477
Raytown, Mo 64133

BEST VALUE IN APPLE II SERIES PUBLIC DOMAIN & SHAREWARE
Largest selection available anywhere, over 1200 BOOTable and MENU-Operated Program Disks, FULL of: ENTERTAINMENT * BUSINESS * EDUCATION* UTILITIES * PRINT SHOP GRAPHICS* APPLEWORKS * EAMON * TELECOMMUNICATIONS * VARIETY * HAM RADIO* NOVELTY * GS. SPECIFIC * PRODOS.SPECIFIC....and MORE....! Programs for APPLE II+, IIc, IIc+, IIe, IIgs & Macs with IIe Simulator Card. Most are available in 5.25 and 3.5 Format. LOW AS $1 A DISK * MC & VISA ACCEPTED * NEXT-DAY SHIPPING IS AVAILABLE * SPECIAL OFFERS FOR 'NEW' CUSTOMERS.Send $2.00 for CHRISTELLA's Descriptive Catalog and Demo Disk.....Be PLEASANTLY Surprised

CHRISTELLA ENTERPRISE
P.O. Box 82205
Rochester, Michigan 48307-9998

FREE APPLE PUBLIC DOMAIN CATALOG
Request free catalog containing complete descriptions of hundreds of programs for the Apple II+, e, c, c+, and GS computers. We carry the very best in all categories including Business, Home, Education, Utilities, Games, Print Shop Graphics, Appleworks Templates, and more. We use only high-quality colored disks which are completely SELF-BOOTING and MENU-DRIVEN. All orders are shipped the same day they are received. We pay shipping with small minimum order. Request free catalog or send $2.00 for catalog and demo disk. Money-Back Guarantee! Send for yours today!

MOONLIGHT SOFTWARE
P.O.Box 179144
San Diego, CA 92177

Software

FAMILY ROOTS, LINEAGES, TREE CHARTS
From our collection of software to keep track of your family, choose one to fit your needs and pocketbook! Our software handles gobs of data for each of millions of people. Print pedigree and descendants charts, group sheets, person sheets, indices of names, address labels, more. Do screen tracing and searches. Compatible with your word processor. Call for a FREE catalog. Satisfaction guaranteed! Prices start at $49. All Apples, Macs, PCs, and more. MC/VISA/AMEX

QUINSEPT
PO Box 216
Lexington, MA 02173
617-641-2930 (Mass.)
800-637-7668 (USA & Canada)

EUROWORKS ADDS FOREIGN LANGUAGES TO APPLEWORKS
Type French, German, Italian, Portuguese, or Spanish quickly, simply with the classic AppleWorks word processor. Then, from inside AppleWorks, EuroWorks prints your foreign text on an ImageWriter or true compatible. Print every keyboard character plus 8 new ones plus 13 French, 7 German, 10 Italian, 13 Portuguese, or 10 Spanish.No conflict with TimeOut. EuroWorks REQUIRES an ImageWriter I, II, or LQ; Apple DMP; MT85/86; or Seikosha SP-1000AP. SPECIFY APPLEWORKS 2.x or 3.0. ORDER FRENCH ($24), SPANISH ($24) or ALL FIVE LANGUAGES ($39). ADD $3 S/H. Check, MO, Net-30 School PO, VISA/MC. Brochure on request.

The S.A. AuTeur Co A66
PO Box 7459
Beaverton, Oregon 97007
(503) 645-2306

FAMILY TREE GENEALOGICAL RECREATION FAST AND FUN
Let FAMILY TREE automatically link together your family's history into an easy to operate (and fun to use) data file. Print a wide variety of charts, ahnentafels, and group sheets to your printer or AppleWorks file! It even shows family relationships! Imports data from AppleWorks or LDS - PAF data files. For enhanced IIe, IIc or IIGS. **A BEST BUY** at only $39.95 + 2.50 S&H (CA add tax). SASE for more info. 90 day satisfaction guarantee! Specify 3.5 or 5.25 and send check or MO to the author:

Robert M. Merrill
6180 Via Real #25
Carpinteria, CA 93013-2863.

Music

ELECTRONIC MUSIC MIDI PRODUCTS

New Release: MidiMate software-MIDI utility for SynthLab $49, and SysEX-GS system exclusive librarian $34. Turn an Apple II or Mac into an 8- track or 64-track MIDI Music studio with sequencing software using step/real time recording, auto correct, editing functions and graphics: Passport MasterTracks Jr. GS $119, MT PRO GS $299, Dr T's KCS V 2.0 IIe, II+ $155, Glasstracks IIe, II+, GS $88, GS/Mac/IIe/II+ STARTER PACK: MIDI Software + MIDI interface + cables $159. Mac software: Trax $79, EZVision $119, Vision $349, MiBac Jazz $109, Band in a Box w/styles $79, PRO 4 $339, Beyond $249. Music Printing Music Writer GS/Mac-3 staffs $88, 8 staffs $197, 40 staffs $394 or IIe MusicWriter 4 staffs $195 or 30 staffs $385, Encore Notation + MIDI + 2-6' cables Mac $399, IIe $259, GS or Mac $158. Connect your Apple II/Mac to MIDI Keyboards: Apple II+, IIe MIDI snap-in card 1x2 channels $79, GS/Mac 1x3 $69 or with serial Thru switch and Diode MIDI Signals $89.2x6 studio $169, MIDI books $2.50 S/H each: A Guide to Computer Music $16.95, Music and the Mac $16.95,Music and Technology $19.95, Electronic Music Dictionary $15.95,Casio Insider's Guide $16.95. Black molded MIDI cables: 6' - 6.95, 10' - 7.95. and up to 50' available. Amazing multi-timbral MIDI Keyboards only $369-$999. Studio or classroom MIDI Reference Poster $14 + $5.50 S+H. All MIDI software/hardware, music ed. and band charting aid software, editor-librarians for any level user: MIDI any Apple II's, GS, MAC, C-64, C-128, IBM/Compatibles/Laptops, Atari ST, Amiga. Canadian Orders & School P.O.s welcomed! Complete MIDI Buying Guide Catalog-
Call or write to

SOUND MANAGEMENT
Electronic Music Products
P.O.Box 3053
Peabody, Ma 01961
Check, MO, VISA, MC School P.O.
Call 1-800-548-4907 Orders USA
Call 1-508-531-6192 foreign countries

Taxes

TAXES AND MORTGAGES

Mr. Mortgage: 18 AppleWorks templates to help you analyze mortgages and decide which is best for you. Only $29.95. **TaxSmith**: Tax software, 4 versions, Quick (4 forms, $9.95), Family (10 forms, $19.95), Full (21 forms, $49.95), Pro ($74.95). Includes 1992 tax planner. Call for details. Ships in January 1992. Works on any Apple II, 128K minimum, and AppleWorks. Mac Excel versions too. By Douglas M. Smith (The Cell Block) - "the world's greatest AppleWorks spreadsheet wizard" - Softdisk #104. Add $1 s/h), NC add 6% tax. VISA/MC. Order toll-free: **(800) 826-7146**.

DOUBLE SCORPIO SOFTWARE,
6704 Van Haven Drive,
Raleigh, NC 27615
(919) 676-4227

TAX PACKAGE ONLY $24.95

Tax Spreadsheet is a stand alone program. It does NOT require AppleWorks , and will run on any Apple II with atleast 48K. It includes forms 1040, 1040A, 8606, 4562, 2441, 2106 and schedules A through F, R and SE. All of the tax tables are built in. Just enter your data on each form and calculations are done in spreadsheet fashion. Totals from each form are carried over to the other appropriate forms. Forms are then printed in an IRS approved format on plain paper. The data can be saved to disk and retrieved later to make changes. Best of all, yearly updates are only $12.00. Send $24.95 plus $2.00 shipping to:

STEVEN KARASEK
855 Diversey Dr.
St.Louis, MO 63126
314-961-2052

Computers & Supplies

SUPER DEALS ON MACS & APPLES!
BUY SELL ** TRADE**
USED ** NEW

Apple IIc/IIc+,IIe	Lowest
Apple IIgs 1.25 Meg	$599.99
•MAC PLUS 2.5/40 EXT HD	$899.99
•MAC SE 2.5/20 EKB	$1049.99
•MAC Classic 2.5/52(new)	$1199.99
•MAC II 2/40 EKB	$1999.99
•MAC SE/30, IIcx, IIci, IIfx	Lowest
•MAC LC,IIsi, Portable	Call
Imagewriter I/II from	$249.99
Apple 3.5" Unidisk 800K	$269.99
Mice/Apple HI-Speed SCSI	$59.99-99.99
Quantum 40/80 Meg HD (new)	$340-$475
Classic Upgrade Kits 2.5/40	$279.99
Memory /Cards	Lowest
Floppy Drives	Call
Parts, Peripherals, Repairs	Lowest

Also open evenings & weekends

M.P.-COMPUTER MICRO SYSTEMS
655 W. Evelyn Avenue #2
Mountain View, CA 94041
(415) 960- 1514 (VOICE)
(415) 968-0509 (FAX)

FACTORY FRESH RIBBONS

Ribbon	Black	Color
Apple Imagewriter I,II	$ 2.25	$ 2.95
Imagewriter II 4 color		$ 4.95
Imagewriter II 4 color Heat transfer		$ 9.95
Imagewriter LQ (Black and 4C)	$ 8.95	$13.95
Panasonic 1124	$ 3.50	
Epson MX/FX/RX80	$ 2.50	$ 3.50
Epson MX/FX/RX100	$ 3.50	$ 4.00
Star NX1000	$ 3.25	$ 3.95

For Orders of less than $6, please add .75¢ each.
Hundreds more.
Colors (BLUE, RED, GREEN, PURPLE,)
-PREMIUM IS ALL WE SELL!
Shipping/Handling $3.75 per order (over $75 we pay S/H).
AK,HI,P.R.,APO/FPO, Canada add $6. S/H to all orders
Free box of 10 diskettes with orders over $100.00 (specify 5.25 or 3.50). New York residents please add sales tax.
School, hospital and govt. PO's welcome.
-MONEY BACK GUARANTEE

ISLAND COMPUTER SUPPLY
305 Grand Boulevard
Massapequa Park, New York 11762
(516) 798-6500

Designed especially for teachers!

Ten Easy-to-use Templates
from *inCider/A+*!

Classroom Management Disk for AppleWorks 3.0

Reduce class preparation time! Manage your classroom more effectively! Make your teaching life more productive with the power of AppleWorks 3.0 and *inCider/A+*'s Classroom Management Disk. Ease the paperwork crunch for good, and build a convenient data bank of lessons, tests, reports, grades, and more!

•

It features specially designed templates, ready-to-use as they are, or modify as you choose. Each disk comes with a documentation manual that will guide you quickly and easily through these useful, convenient templates.

Homeroom Database
On-Screen Drill
Grade Equivalent
Lesson Plan
Planning Calendar
Letter Form
Test Bank
Test Construction Kit
Gradebooks
Quiz Machine

Only $9.97!

That's less than $1.00 per template!

Foreign Airmail: add $3.95. Foreign orders must be paid in U.S. funds drawn on a U.S. Bank. Canadian orders: add 7% GST. California residents: add 7.25% sales tax. Requires AppleWorks 3.0. AppleWorks is a registered trademark of Apple Computer, Inc., licensed to Claris Corporation.

•

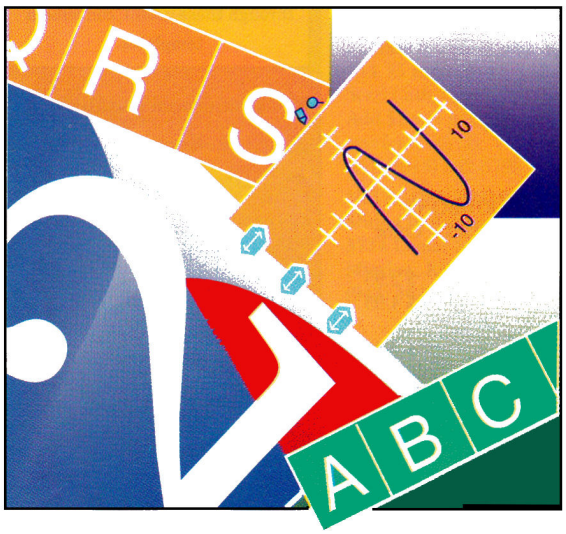
CALL TOLL-FREE
1-800-343-0728
(in NH: 924-0100)
inCider/A+ Special Products
80 Elm St
Peterborough, NH 03458

#5050 H215BC

GRAPHIC DISPLAY

Real-world math problems can provide all the practice any child could need.

A few months ago, I overheard a group of diners in a restaurant trying to figure out how much each person owed on the bill. One of them passed the check to a friend and said, "You figure it out — I was never much good at math." With this comment, the conversation turned to various tales of discomfort with arithmetic — almost as if it were a badge of honor. I'm amazed that we live in a society that tolerates math illiteracy. Imagine the response if one of the group admitted that he or she couldn't read.



By DAVID D. THORNBURG, Ph.D.

If the general population is uncomfortable with mathematics, the problem isn't a lack of time spent on it in school. Rather, it's the use of that time. Much math instruction in the elementary grades is devoted to memorizing isolated facts and algorithms, such as the one for long division. Working on "real" math projects and developing personal math intuition is sacrificed in favor of preparing for standardized tests, which emphasize context-free computational skills.

Tragically, many computer-based math programs (including those designed for home use) concentrate on developing these skills through repetitive drill. Parents spend hundreds of dollars on software designed to turn their children into slow replicas of the $5 calculators you can buy at your local drugstore.

It's refreshing, then, to encounter software designed to engender a deeper understanding of math. One such product, Wings for Learning's **Math Connections: Algebra I** (P.O. Box 660002, 1600 Green Hills Road, Scotts Valley, CA 95067-0002, 408-438-5502, 800-321-7511, $129), turns the computer into a laboratory for exploring polynomial functions. This program (available currently only for the Mac) lets students examine polynomials from both the computational and the representational side.

With Math Connections, you create boxes on screen to hold algebraic functions and graphs. When you draw a line to connect a function box to a graph box, the program then plots the function. (See **Figure 1**.) Any changes in the function are reflected in the graph, and any changes in the graph are reflected in the function. (See **Figure 2**.) This reciprocity helps the student develop intuition about the behavior of polynomials. You can use a function not only to draw a graph, but also to create a table of numbers and to move a graphics object on the display screen. The program is really a construction kit for exploring mathematical ideas.

For example, consider a classic brain teaser: *A train leaves Los Angeles for New York City at 2 p.m. Pacific Standard Time and travels east at a steady 60 miles per hour. Another train leaves New York for L.A. at 5 p.m. Eastern Standard Time, traveling west at 50 miles per hour. The total track length from coast to coast is 3000 miles. At what*

Continued on page 64

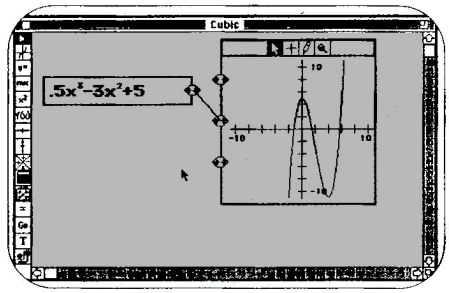


Figure 1. Math Connections screen showing a formula and its graph.

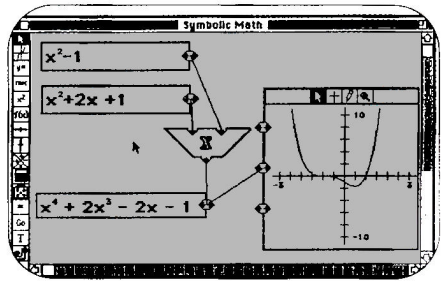


Figure 2. Math Connections screen showing symbolic multiplication and a graph of the resulting function.

Illustration • Elizabeth Auer

CALL FOR YOUR FREE FALL & MAC CATALOGS!

EDUCATIONAL RESOURCES™

USA/Canada 800-624-2926

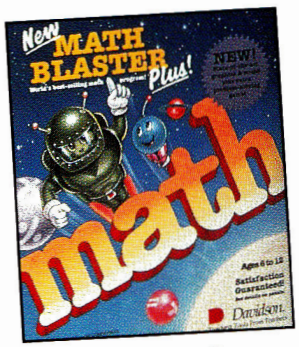
In Illinois 708-888-8300

Save up to 60%

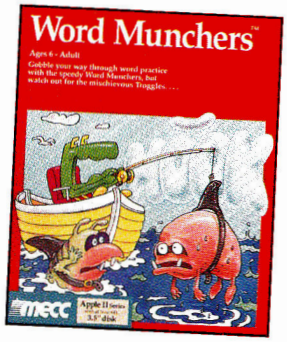
YOUR SINGLE SOURCE SUPPLIER FOR SOFTWARE ■ DISKETTES ■ ACCESSORIES

Give the Gift of Learning

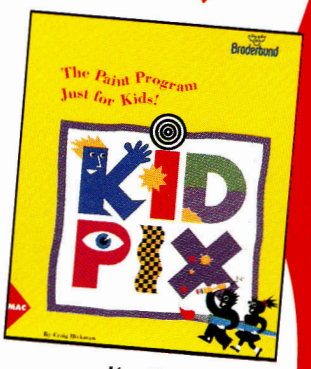
McGee at the Fun Fair
$24.99 IIGS/MAC/IBM



Math Blaster Plus
$29.99 APL/IIGS/IBM
School Version $48.99
MAC $41.99



Word Munchers
$23.99 APL/IIGS
School Version $41.99
MAC $32.99/School Version $48.99



Kid Pix
$34.99 MAC/IBM
School Version $47.99

#1 Apple II Source

RIBBONS/DISKS/PAPER

ImageWriter I & II*	$ 2.50
ImageWriter II 4-color	4.95
ImageWriter II 4-color Heat Transfer	14.95

* For quantities less than 6 or for color - add $1.00 each

Disks - Multiples of 50

5.25" DS/DD disks.. 35¢ 3.5" DS/DD disks.. 69¢

Disks - Colored 10 Pack Assortment

5.25" color disks $6.95 3.5" color disks $14.50

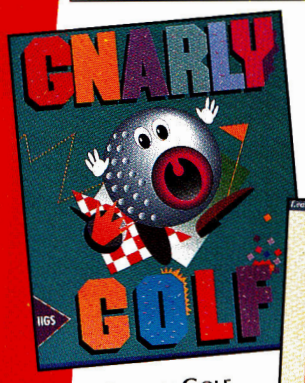
Colored Paper - 250 Sheet Assortment ... $10.95

EXTRAS

ComputerEyes, Color IIGS	$ 194.95
PC Viewer 480S	895.95
PC Viewer 1600LC Color	1895.95
Vulcan 40 meg Hard Drive APL/IIGS	649.95
Quickie Hand Scanner APL/IIGS	194.95
InWords (for use w/ Quickie)	79.95
IIEasy RAM 64K Memory Upgrade	18.95
Laser 128 Color System	489.95
Laser 128 w/ Monochrome Monitor	349.95
Supra 2400 External Modem	97.95
Supra 2400 Modem w/Microphone software & cable	139.95
105 mb Quantum SCSI Hard Drive	477.95

CD-ROM/LASERDISCS

Desert Storm	CD	$34.95
Cosmic Osmo	CD	59.95
Scary Poems for Rotten Kids	CD	69.95
Regard for the Planet	LD	62.95
For All Mankind	LD	99.95
Bio Sci II	LD	492.95
AIDS	LD	493.95
NEC Intersect CDR-37 CD-ROM Player		475.95
Pioneer LaserDisc LD-V2200 Player		699.95



Gnarly Golf
$17.99 IIGS

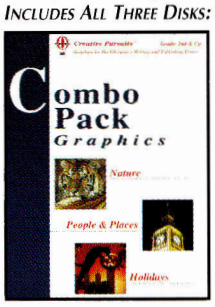
Treehouse
$29.99 APL $35.99 IBM
School Version $41.99 APL/$47.99 IBM

COMBO PACK GRAPHICS

Enhance The Children's Writing & Publishing Center

Includes All Three Disks:

350 Color Graphics!



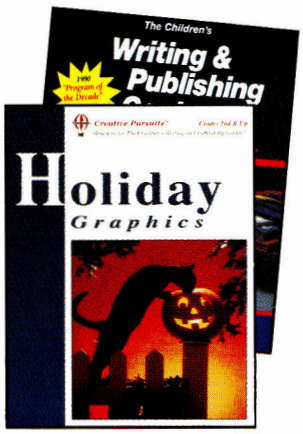
Nature Graphics

Holiday Graphics

People & Places Graphics

$49.99 APL/IIGS
School Version $59.99

NEW! Holiday & Seasons EPS Graphics $59.99 MAC



Children's Writing & Publishing Center
$34.99 APL/IIGS

Holiday Graphics $19.99 APL/IIGS

Special Bundle $49.99

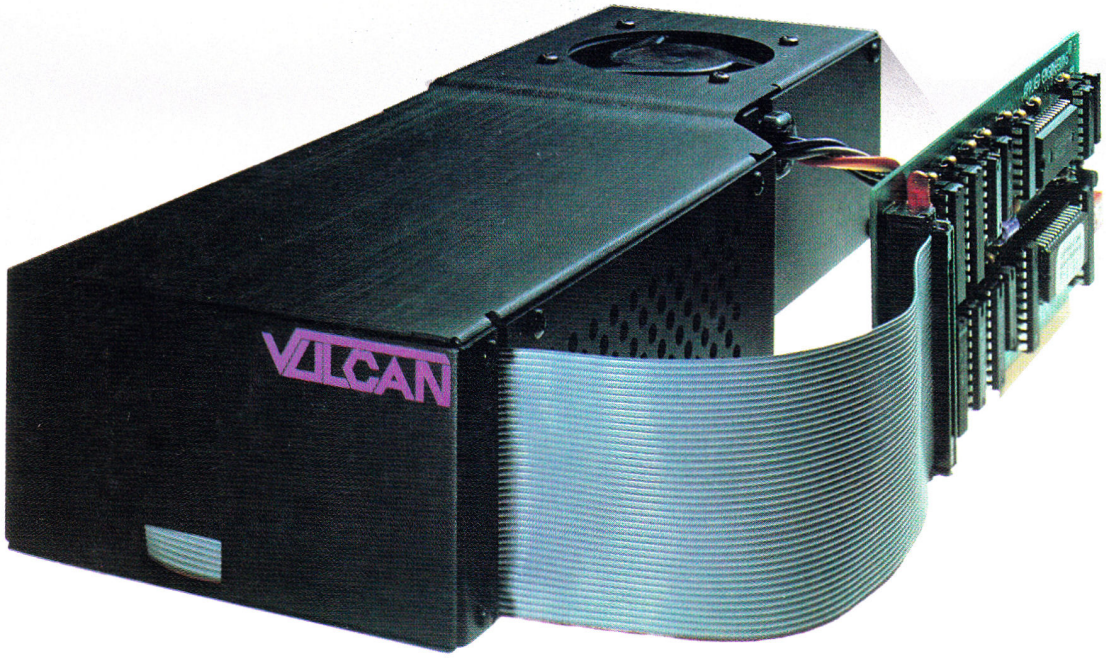
EDUCATIONAL RESOURCES • 1550 Executive Drive • Elgin • IL • 60123

- Checks & School P.O.'s welcome
- $25 min. on charge cards
- Free shipping over $300 in U.S.
- Under $300 add 5% shipping w/ $4.00 min.
- Canada under $200 add 10% w/ $5 min. / over $200, add 5% — also add 7% GST
- Prices effective through January 31,1992

VISA MasterCard DISCOVER

Circle 220 on Reader Service Card.

As Good As Gold.



Improved software and hardware for the best-selling Apple II hard drive!

The Vulcan Lives in New Vulcan Gold.

Now Vulcan, the premier hard drive for the Apple II family, gives you more speed and flexibility than any external or internal drive with the new and improved version—Vulcan Gold. *Look at these features!*

- Designed specifically for the Apple II series.
- Preformatted—plug it in and you're off!
- Recognizes ALL Apple software including GS/OS, ProDOS, DOS 3.3, Apple Pascal, CP/M and MS-DOS for the PC Transporter.
- Can be split in up to 16 different partitions.
- 70 watt power supply (nearly twice the capacity of competing systems).
- Super-fast, state-of-the-art, IDE caching drive.
- Tested and proven for years with all existing peripherals.
- Support for years to come.

*New Life for Existing Vulcans**

Existing Vulcan GS owners can now upgrade to the Gold-Cache software at a super-low price. Your Vulcan will be as good as gold.

- 300–900% increase in writing speed!
- 50% increase in reading speed.
- Quickly choose which partition and even which drive to boot from immediately upon startup—simply hold down the space bar and select.

** Vulcan GS 40 & 100Mb only. 20Mb and Vulcan IIe, call Æ sales for upgrade details.*

Order today!

To place an order or for more information, see your dealer or call (214) 241-6060 today, 8:30AM to 6:30PM (CST), M–F. Or send check or money order to Applied Engineering. MasterCard, VISA and C.O.D. welcome. Texas residents add applicable sales tax.

Vulcan Gold 40Mb $899
Vulcan Gold 100Mb $1795
Gold-Cache Software Upgrade $59

Applied Engineering®
The enhancement experts.
A Division of AE Research Corporation
(214) 241-6060
FAX: (214) 484-1365
P.O. Box 5100
Carrollton, TX 75011

Made IN THE USA

©1991. AE Research, Inc. All rights reserved. Brand and product names are registered trademarks of their respective holders. Prices and specifications subject to change without notice.